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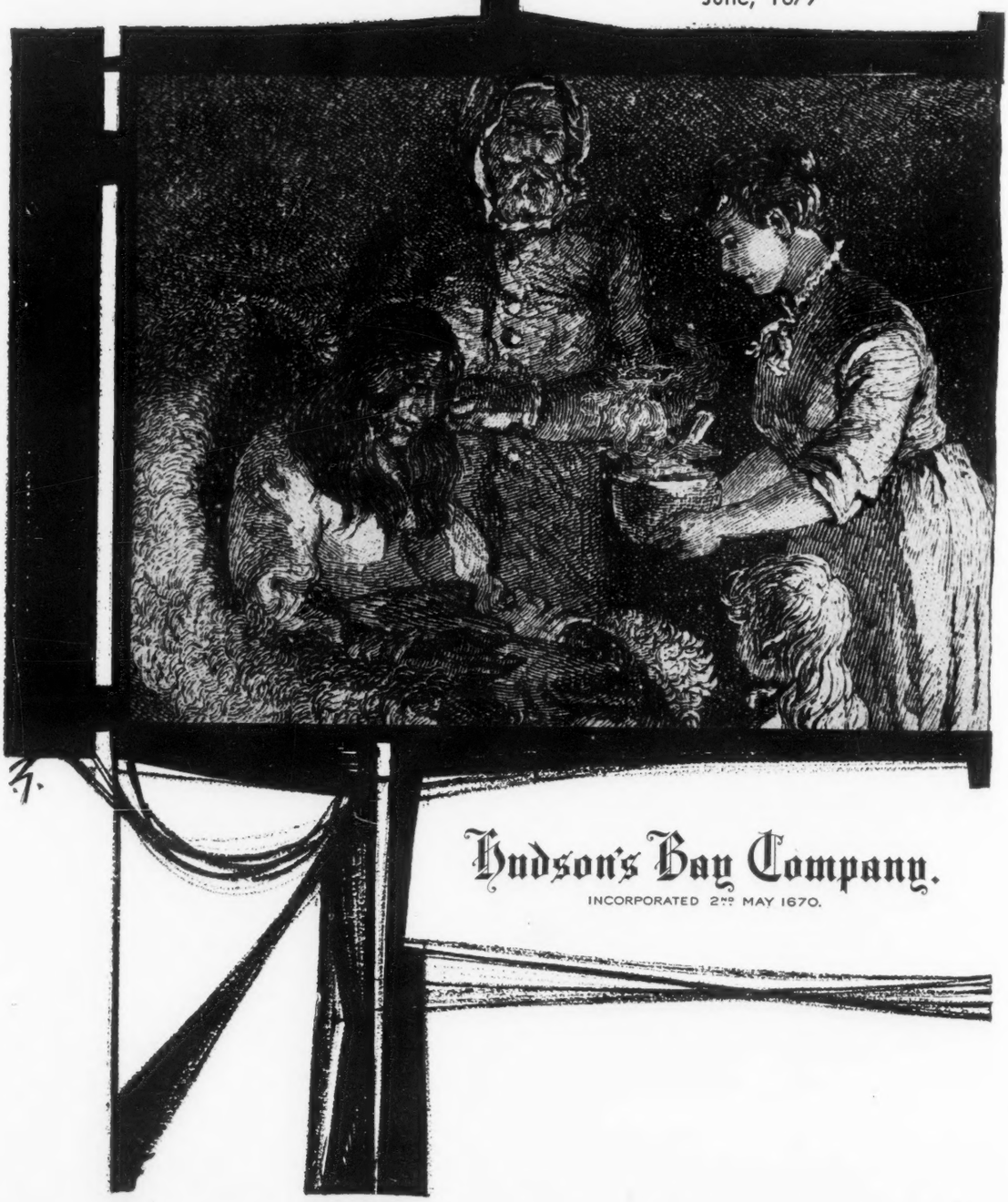
The Beaver

SUMMER

CARE FOR A SICK INDIAN

"The Company has always been a good friend to him and his, and he pays when he can . . . No attempt was ever made to cheat him, and there never will be. When he is ill he goes to the nearest fort, and is cared for and attended until he recovers. When he does his duty well he gets a present, and he never performs any labor without receiving fair compensation."

from
"The Honorable Hudson Bay Company"
Harper's New Monthly Magazine
June, 1879



Hudson's Bay Company.
INCORPORATED 2ND MAY 1670.

The Beaver

MAGAZINE OF THE NORTH

Editor: Malvina Bolus

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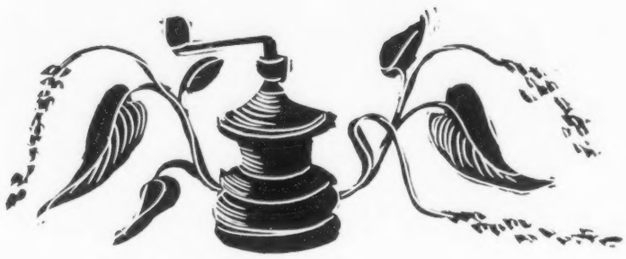

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Eskimos unloading ship at Port Harrison.
Detail from a painting by John Groth.

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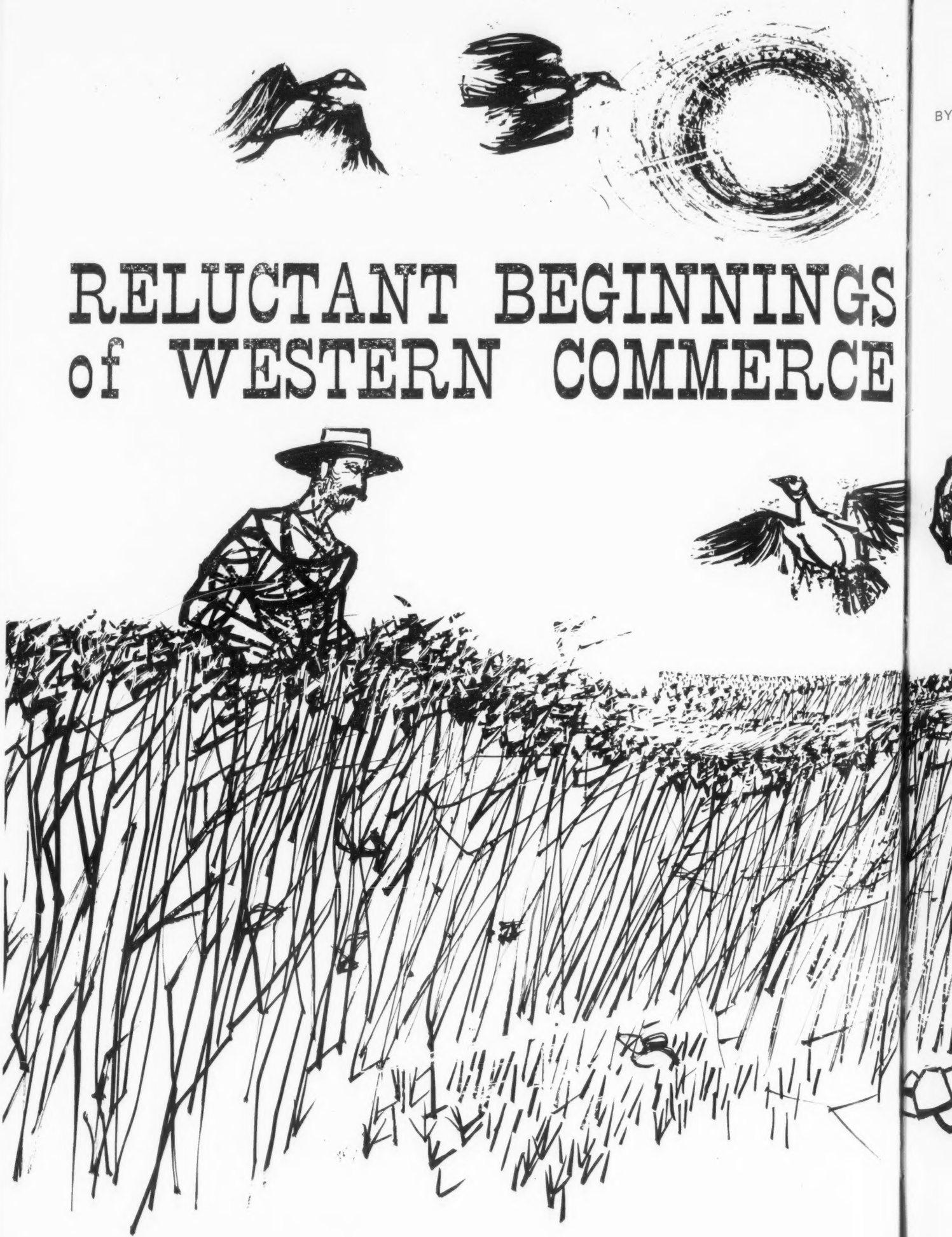
RELUCTANT BEGINNINGS of WESTERN COMMERCE



BY RALPH HEDLIN

Journalist, free-lance writer, and broadcaster.

THE legislators of today, struggling to protect and expand export markets for Canadian products, would have gained sympathetic understanding from Sir George Simpson. Modern governmental ministers may face serious difficulties in finding markets for the produce of wheat field and oil well. The originator of industrial and trade expansion and promotion in the Canadian Northwest—Sir George Simpson—faced even more perplexing problems.

As Governor of Rupert's Land, Sir George Simpson was intimately concerned with the settlement at Red River. This was, of course, particularly apparent in an administrative sense after the Hudson's Bay Company bought back the settlement at the Red River from Lord Selkirk's estate in 1834. But, even prior to the interest of ownership by the Hudson's Bay Company in the Selkirk Settlement, Sir George Simpson had taken on many of the attributes of a present day government minister of industry and commerce.

Lord Selkirk made a number of efforts to populate his settlement with livestock. He was well aware of the need for an export staple, and livestock products might, he reasoned, afford it. But he had singular difficulties in getting the new farms stocked.

Lord Selkirk shipped eight head of cattle to Stornoway to be brought across the Atlantic to York Factory with the first party destined for the proposed settlement at the Red River—the servants under Miles Macdonell. In the confusion of getting under sail, complicated by the machinations of the competing North West Company, the cattle were not taken aboard. Macdonell did, however, pick up a bull and a heifer at Oxford House on his way from York Factory to the Red River, where they were dubbed Adam and Eve. Peter Fidler later bought a bull, a cow and a heifer from the Northwesters at Fort Souris on the Assiniboine.

With two bulls and three females there should have been the nucleus of a herd. However, one of the bulls was vicious and, secure in the possession of the other one, the settlers butchered it. The second bull was drowned when drinking at a water hole chopped in the river ice. The prospect of herds of cattle dotting the plains had suffered a crippling reverse. Selkirk's suggestion that a small herd of buffalo should be gently herded into the pastures to mate with the domestic cattle had little practical value.

Indeed, it was almost ten years before any number of cattle appeared at the colony and then they were driven from the United States. In 1821 a speculator, Rolette, brought in a herd from Prairie du Chien on the Mississippi, bringing the total cattle population up to 93 head. A Mr. Dousman, who had contracted to bring in a herd for Lord

DRAWINGS BY BRUCE HEAD

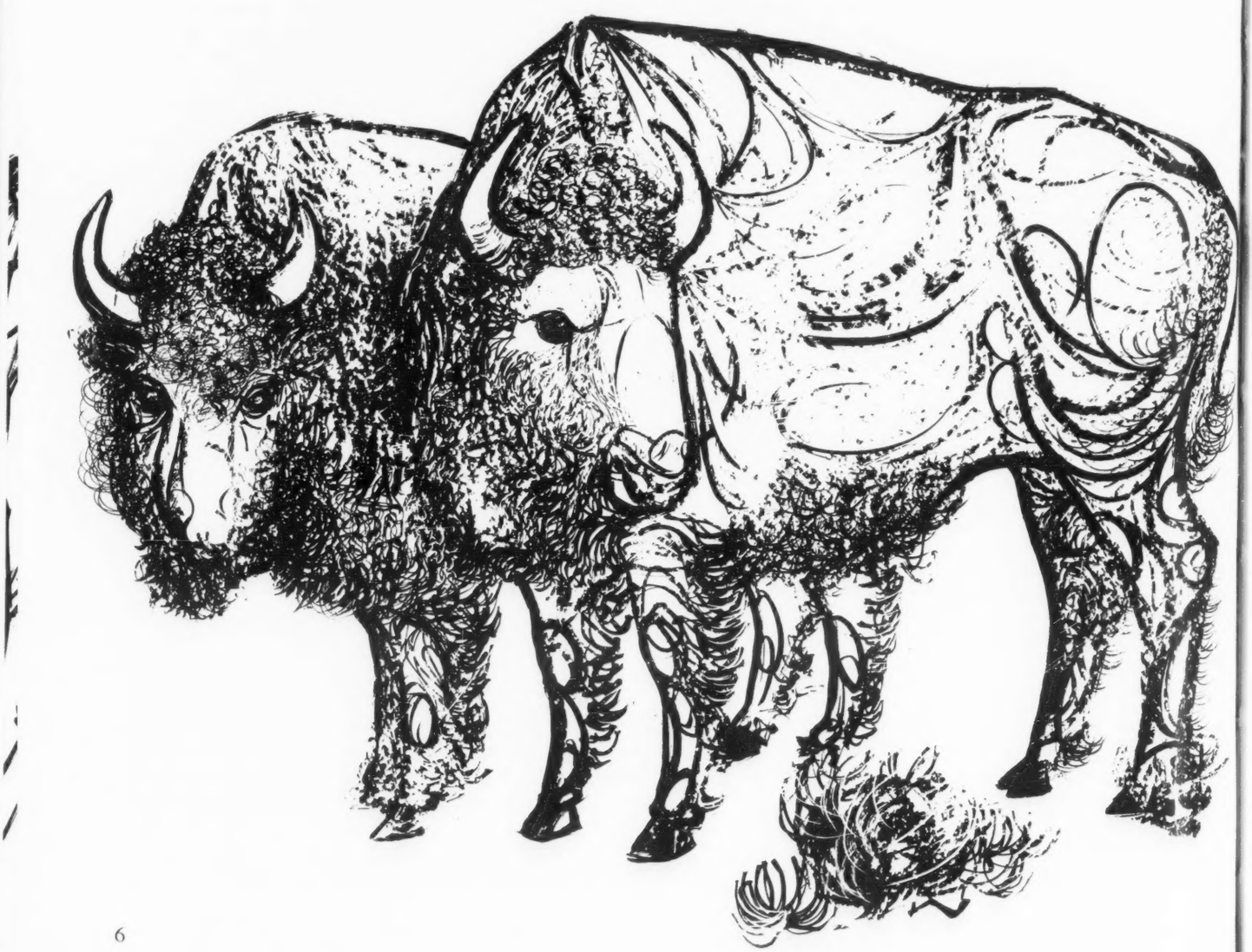
Selkirk, after losing two herds on the way from cold and starvation, finally delivered 170 head on August 28th, 1822. This northern migration culminated—and concluded—with the arrival from Louisiana and Kentucky of between four and five hundred head in 1824.

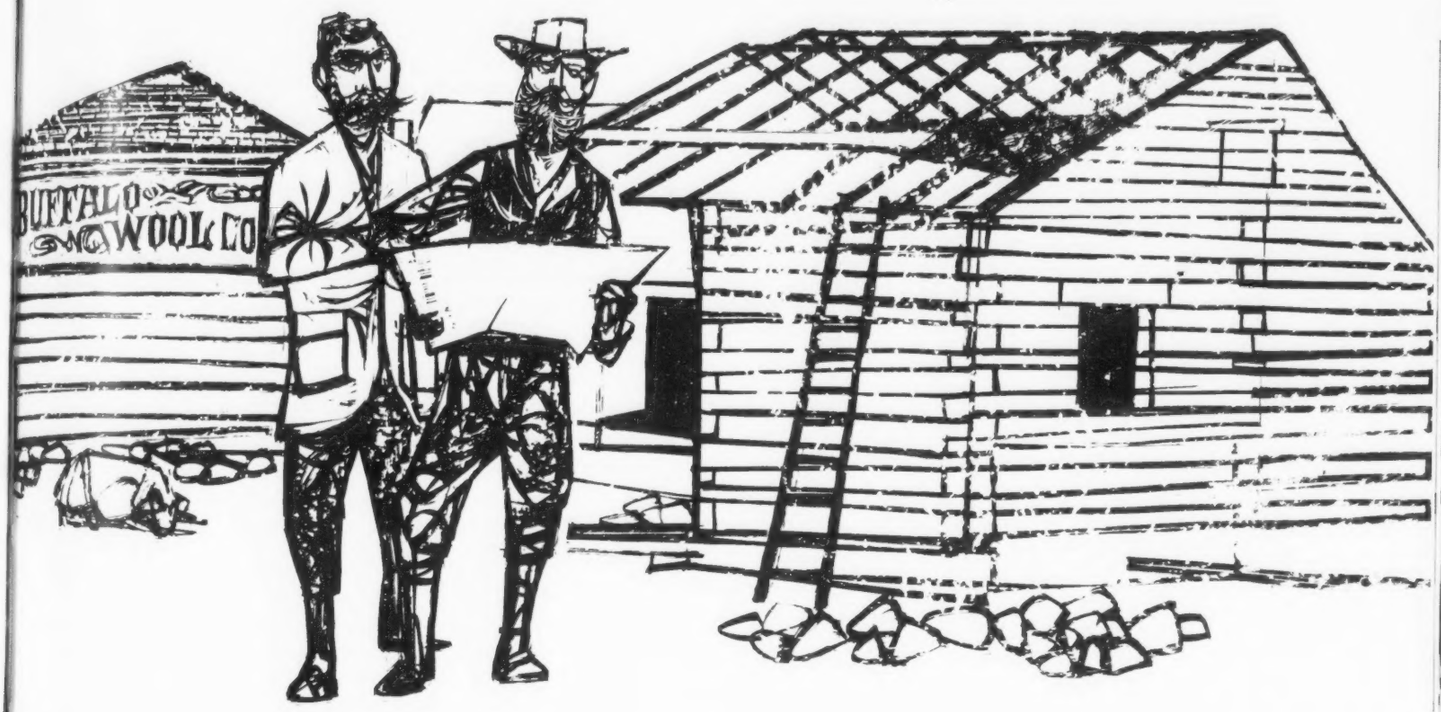
Clearly cattle numbers were mounting rapidly. Other livestock was less numerous: in 1821 there were at the Settlement 78 horses, 12 pigs, and 11 sheep. Selkirk had sent out a flock of merino sheep in the early years of settlement but they had not flourished. Another flock sent through York Factory suffered a grave loss: the rams were isolated on an island and the water rose and drowned them all.

Simpson became Governor of the Northern Department in 1821, when the North West Company and the Hudson's Bay Company became one. For the next fifteen years one attempt after another was made to develop a line of production that would provide an export staple for the farmers and settlers at the Red River. Simpson recognized that the prospects of the settlement were bleak if their only market was domestic—the supplying of the fur trade.

All the early efforts centred upon the provision of raw material for the spinning and weaving trade in England. This was rational. The rapid growth of machinery-equipped woollen factories in England had put the raw material for weaving—wool, hemp, flax, fibre—at a premium and the prices were good. As with furs, long the one successful commodity exported, the value relative to weight was high. Fibres could be exported over many portages and thousands of miles without becoming as absurdly uneconomic as would the export of grains.

The first venture—also the first joint stock company formed in the Northwest—was the famous Buffalo Wool Company. One hundred shares at a par value of £20 sterling each were issued and Mr. John Pritchard was placed at the head of the fledgling company. The objectives





of the concern were economic: to process the wool of the buffalo for sale to the woollen mills of England, and to tan the hides for domestic sale.

Need the business have failed? At this late date it is hard to be dogmatic. But the shrewdest businessman in the Northwest, George Simpson, did not think so: "If the business were properly managed I have not a doubt of its turning out well," he wrote to Lady Selkirk.

The qualification was, however, very well taken. The market in England was made ready for the receipt of the buffalo shawl. Spurred by the interest and energetic patronage of Lady Selkirk, English weavers made extensive experiments with buffalo wool. There was a very real prospect of the buffalo shawl becoming an article of fashion in early 19th century Britain. But the prospect could not be realized unless the wool could be shifted from the backs of the buffalo in the Northwest to the mills of England, and so to the ladies' trade.

The Red River enterprisers were responsible for this supply. They deposited their £2,000 capital with the Hudson's Bay Company. Buffalo hunters were advised that there would be a ready market for hides at the Red River, and a processing plant was erected in the heart of the Settlement.

Buffalo were still plentiful south of Pembina, within 80 miles of the factory. In the spring, when the hunters returned, they brought some wool and a considerable number of buffalo hides. The factory went into operation, but from the first, the costs were too high. From 8 to 10 shillings was paid for hides. A competent wool puller in the factory could earn from six to ten shillings in a day; the same man would earn two shillings a day in the field, if he worked hard.

It was found that it was costing two pounds, ten shillings a yard to produce cloth from the wool of the buffalo; the cloth was finding a ready market in Britain at four shillings and sixpence a yard. In 1825 the operations were suspended. All that remained of the enterprise was a substantial adverse balance on the books of the Hudson's Bay Company. The debt was written off by the Company.

The enterprise was not, however, an unmixed failure. The high wages paid by the Buffalo Wool Company had transferred a substantial block of money, in effect, from the Hudson's Bay Company to the settlers. And, in the years following, the fact that the settlers had some money encouraged speculators to herd cattle up from the United States. The one continuing effect of this joint stock enterprise was to create a cattle population in the Red River Settlement.

It is also reasonable to assume that the success of the cattle drives in the 1822-24 period encouraged the undertaking of the famous 1,500-mile sheep drive from Kentucky to the Red River.

This was, however, one of Simpson's later concepts. The next undertaking, which might have served the twin purposes of aiding the fur trade and furthering industry

and commerce at the Red River Settlement, was the building of a winter road through Oxford House, between the Settlement and York Factory.

The idea originated with the Earl of Selkirk and, in 1827, several years after the death of the Earl, work was begun on the road. Selkirk had suggested that a road might be cut and that reindeer might be used as a source of motive power. Simpson used dogs the first winter, but found them unfit for the work. In the summer of 1828 shelters were built at eleven-mile intervals along the trail with the intention of using oxen. Oxen were, in fact, used on the road but in the cold and deep snows of winter they were no more satisfactory than the dogs had been. A few years later the project was abandoned.

In the meantime Simpson had been seeking an alternative source of weaving material for the wool factories of England. He imported flax and hemp seed and distributed it to the farmers on the Red River at no cost to them. Indeed, he provided cash prizes, to be awarded to those who harvested the greatest yields of flax or hemp.

The crops grew well and prizes ranging from one to five pounds sterling were awarded. But the steeping, beating and hackling, necessary steps for the removal of the fibres from the coarse stems, was too much of a challenge to the farmers. Some of the old settlers, accustomed to such work in Scotland, had a limited success and a few hundred yards of coarse sheeting were actually manufactured. But the project was never really successful and in a few years it, too, was abandoned.

In April 1832, Governor Simpson met with representatives of the settlers in Fort Garry, at the confluence of the Red and Assiniboine Rivers. He pointed out to his listeners that the fertile plains around the colony were unlimited in extent. There was a good export market for animal tallow—the Hudson's Bay Company itself was exporting buffalo back fat and the trade was profitable. Could not the settlers organize a company to stock the limitless plains with cattle and export the tallow they would produce?

They could and they did. Two hundred shares of a par value of five pounds each were sold and converted into a herd of 473 head of cattle. The animals were branded with a bold TT (Tallow Trade) and driven to the pastures to the east of the settlement to fatten.

The company was in difficulties almost at once. A storm at the end of April followed by cold weather complicated the provision of feed and 26 head perished. In the summer that followed the animals improved in condition but inadequate shelter and too little feed was provided for the winter following; 32 perished from combined cold and malnutrition and the wolves claimed an additional 53. In the following winter, in spite of improved shelter and feed supplies, the cold and the wolves claimed another 36 head. In October, 1834, the assets of the company were disposed of at public auction.

In the meantime Governor Simpson had again turned his thoughts to the hungry demand of the woollen mills in England. The cattle drives from Kentucky and Louisiana ten years earlier had been successful. Why not try sheep? A joint stock company was formed with a paid up capital of £1,200, and twelve men with two carts and a number of saddle horses journeyed south.

The expedition was entrusted to the joint command of William Glen Rae (a Hudson's Bay Company clerk, brother of Dr. John Rae) and to J. P. Bourke, a retired H B C clerk who had settled at Red River. Leaving in the late fall of 1832 the party travelled south along the Red River to St. Peter's River, followed it to the Mississippi and followed it, in turn, to St. Louis.* They travelled out across Missouri, disagreed with the Missouri owners as to a fair price for sheep, and travelled on 450 miles to Kentucky. Here they purchased 1,471 sheep and, early in 1833, started the 1,500 mile trek back to the Red River Settlement.

Their trail was dotted with the carcasses of dead sheep. Over four-fifths of the animals perished, only 241 of the original 1,471 reaching the settlement.

The failure to execute it properly does not mean that Simpson's idea was not a good one. Had the men bought the sheep in Missouri instead of Kentucky—which they could have done—the length of the return trip would have been reduced by one third. Had they then started early in the spring and camped at one place, doing no driving from the time the spear-grass ripened until the deadly, pointed seeds fell to the ground in the early fall, most of the flock might have arrived safely. As it was, they drove through the midsummer months when the spear-grass was ripe and the sharp spears penetrated the wool and worked their way deeply into the flesh. When, as a result, animals could travel no farther there was little alternative but to destroy them.

Certainly there was a demand for sheep. Simpson, on behalf of the Hudson's Bay Company, redeemed the shares of all who had participated in the venture. The sheep were put in charge of the manager of the Hudson's Bay experimental farm and, when the flock was sold by auction two or three years later, they fetched an average price of two pounds sterling each, close to six times the price paid for them in Kentucky.

The failure of the Tallow Company and the sheep enterprise apparently convinced Simpson that there was little purpose in attempting to establish an export business on

*Sheep for Red River, *The Beaver*, March 1945.

the Red River. Much of the original share capital had been collected from fur traders throughout the Northwest and correspondence that has been preserved makes it clear that they were becoming steadily more reluctant to subscribe. Losses on the ventures were made good by the Hudson's Bay Company and there presumably was a limit to how far Simpson would be prepared to incur losses that would finally fall to the Company.

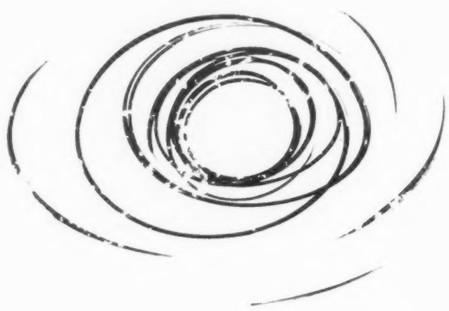
In any case, if these ventures failed there was no reason to expect others to prosper. The overwhelming and, indeed, insoluble problem with which Simpson had to deal was the incapacity of most of the settlers. Artisans and clerks from Europe, retired H B C employees and Metis hunters, they were ill qualified to do an effective and efficient job of producing sheep, cattle, hemp or, indeed, buffalo wool.

"Red River is like a Lybian tiger," wrote Simpson. "The more we try to tame it, the more savage it becomes; so it is with Red River; for every step I try to bring it forward disappointment drives it back two."

The ventures nonetheless helped the Settlement. The Buffalo Wool Factory resulted in a great inflow of cattle. The flax and hemp confirmed the suitability of the soil for these crops. Spinning instructors who were brought from Britain did not result in an export trade, but did accelerate the production by Red River families of homespun garments.

The alternative to producing something wanted by the world of commerce was to become a supplier for the fur trade. This, in fact, is what happened and it restricted the growth of the Settlement for two generations.

None of the ventures succeeded in establishing an export staple. But they did give to Sir George Simpson the indisputable title of the father of western Canadian commerce. He organized the first joint stock companies. His Fox River to Oxford House oxen-powered winter road was the direct antecedent of the modern tractor train of the north. And his basic belief that the economy of the Northwest was dependent upon a steady flow of exports has not been challenged to this day. ◆



Dr. Hohn of the Department of Physiology and Pharmacology at the University of Alberta, has made a number of ornithological expeditions to the Arctic. He restricts the scope of this article to matters affecting arctic birds in general; detailed accounts of particular species will be found in "Arctic Birds of Canada" by L. L. Snyder, reviewed in the winter 1957 "Beaver."

BY E. O. HOHN

Birds in the Arctic

R. T. Congdon

A rare species, the Hudsonian godwit. It is larger than a pigeon and its long bill tilts slightly upwards.

Ralph S. Palmer

Hudsonian curlew, or whimbrel, approaching its nest. The long downward-curved bill distinguishes this shorebird.

THE Arctic as a life zone is defined not as the area north of the arctic circle, but as that beyond the limit of trees. In Canada, this zone extends well to the south of the arctic circle along the shores of Hudson Bay. On the other hand, forested country with a decidedly non-arctic bird life also extends well north of the circle along the Mackenzie Valley. If one excludes a number of species of birds which nest some way into the barrens but belong in the main to the northern wooded country, the list of birds found in the Canadian Arctic is a fairly short one. It can be divided into three sections.

(1) Birds likely to occur anywhere in arctic Canada: Common loon, arctic loon, red-throated loon, whistling swan, Canada goose, Brant goose (with a different race or subspecies in the east and west), snow and blue goose (the blue is now considered to be a colour phase of the snow goose, not a distinct species), pintail, old squaw, common eider, king eider, red-breasted merganser, rough-legged hawk, golden eagle, gyrfalcon, peregrine falcon (or duck hawk), willow ptarmigan, rock ptarmigan, sandhill crane (or little brown crane), semipalmated plover, golden plover, black-bellied plover, ruddy turnstone, Hudsonian curlew (or whimbrel), knot, pectoral sandpiper, red-backed sandpiper (or dunlin), Baird's sandpiper, semipalmated sandpiper, sanderling, red

Baird's sandpiper with chick. The sandpiper is little larger than a sparrow
G. Mary-Rousselière

Arctic tern alighting by its young. This bird makes one of the longest migrations known, wintering in Antarctic regions.
R. T. Congdon

and northern phalarope, pomarine, long-tailed, and parasitic jaeger, glaucous gull, herring gull, Sabine's gull, arctic tern, snowy owl, short-eared owl, horned lark, raven, wheatear, water (or American) pipit, hoary and common redpoll, Savannah sparrow, tree sparrow, white-crowned sparrow, Lapland longspur, snow bunting.

(2) Species confined to the western arctic:
Yellow-billed loon, white-fronted goose, Ross's goose, stilt sandpiper, buff-breasted sandpiper, Hudsonian godwit.

(3) Species confined to the eastern arctic:
Fulmar, harlequin duck, purple sandpiper, Iceland gull, kittiwake, thick-billed murre, dovekie, black guillemot.

The vast majority of these birds avoid the challenge of the arctic winter by migration and the proportion of resident species is very much smaller than farther south. The regular residents are in fact only the snowy owl, gyrfalcon, raven, the two ptarmigans, and the three eastern auks—thick-billed murre, dovekie, and black guillemot.

Towards the north pole, the continents of Eurasia and North America approach one another fairly closely and this no doubt explains the fact that something like two-thirds of our arctic birds are found also in the Old World and are in fact circumpolar in distribution. This is well illustrated by the world distribution of the rock ptarmigan shown in the sketch map. The wide distribution of many of our arctic birds is to some extent obscured by the use of different names for the same bird on the two sides of the Atlantic, thus the loons (all circumpolar except the yellow-billed) are called divers in Britain; the jaegers are there

A downy young snowy owl. This large owl is one of the most widespread of Canadian arctic birds and one of the few species that normally winter in the Arctic.
L. A. Learmonth

known as skuas, the Hudsonian curlew is called the whimbrel and the red and northern phalaropes are known as the grey and red-necked phalaropes respectively.

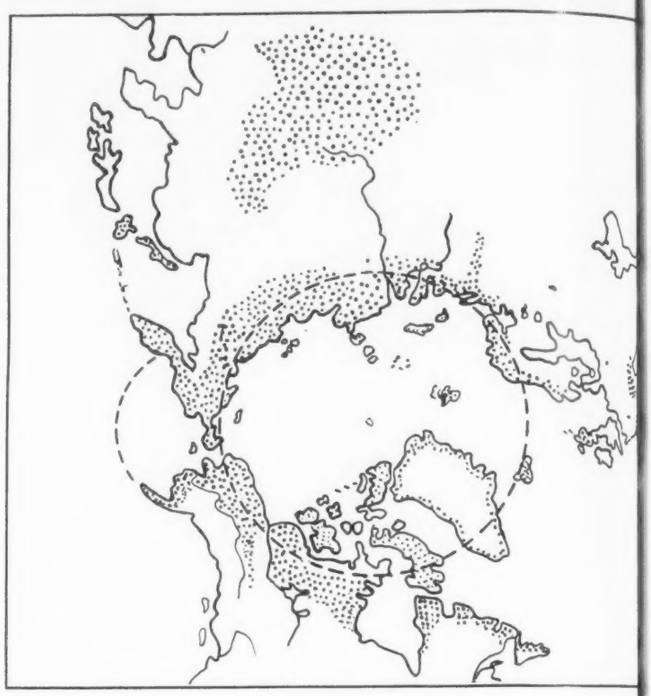
The distribution map of the rock ptarmigan brings out not only its wide range but also the peculiar fact that isolated populations of certain typical arctic species are found on mountain systems far to the south. For example, rock ptarmigan are found in the Scottish Highlands, the European Alps and Pyrenees, and the mountains of northern Japan. Other examples of this sort of distribution are shown by the water pipit which nests a long way south of the Arctic in the Rockies and the Alps, and the snow bunting which nests in small numbers in the Highlands of Scotland.

To explain these peculiarities we have to go back to the Ice Age. At that time, the fore-runners of present day arctic birds were nesting along the southern edge of a vast polar ice-cap. As the ice gradually retreated, they followed it northward but some instead of keeping with the main mass followed ice sheets which slowly withdrew up local mountain systems where the ice finally dwindled to glaciers. Confirming this theory are the findings of fossil bones of certain typical arctic birds in ice-age deposits of countries in the temperate zone where these birds are now extinct.

One wonders whether the few birds that winter in the Arctic have developed any special adaptation to cope with the climate. The various ways in which warm blooded animals in general respond to cold weather can be illustrated by using our thermostatically controlled domestic heating arrangements as an analogy. The onset of cold leads to a narrowing of blood vessels which run beneath the skin (and in mammals, to an arrest of sweating). At the same time feathers or fur are erected, which thickens the layer of still air entrapped in these structures. Since air is a poor conductor the effect is to increase the insulation provided by the animal's covering. This corresponds to the putting up of storm windows in a house.

Greater cold cannot be dealt with merely by cutting down on heat loss and increasing insulation, so the animal must now increase its heat production as well. This would correspond to the turning on of the domestic furnace and like the latter it entails an increased consumption of fuel which in the animal economy is food. The temperature which, to continue the analogy, starts up the furnace, is much lower in arctic animals than in those from temperate or tropical areas. This low setting of the "thermostat" controlling extra heat production is actually the chief adaptation to a cold climate so far discovered in arctic birds and mammals. Because of it arctic animals do not need to eat more merely to keep warm, unless extremely low temperatures are reached. It also implies that the

Sketch map showing world distribution of rock ptarmigan.

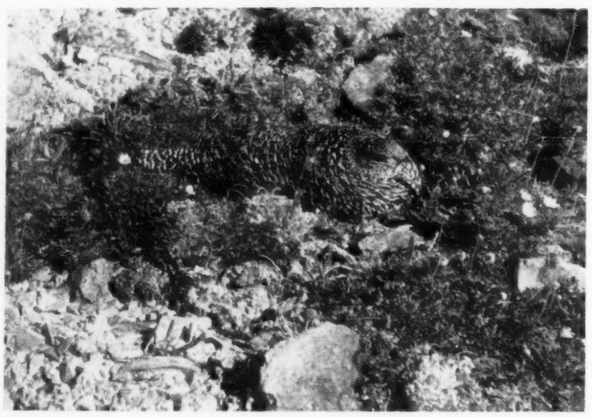


covering layer of arctic animals has a much higher heat insulating value than that of more southerly animals.

There is further a seasonal variation in the insulation value of animal coats. In the fur bearers it is very evident in the difference between winter and summer pelts. Birds show an increased number of feathers in their winter plumages, and in the ptarmigans the toes which are bare in summer become thickly feathered right up to the claws in the cold season.

In a considerable number of birds and mammals which nest over a wide range of latitude, individuals from the northern part of the range average larger than those from the southern extremes. This is well illustrated in the horned lark; arctic specimens have wings about 110 millimetres long whereas those of southern California have wings only 99 millimetres long. This increase in size of northern birds is apparently also an adaptation to the cold. Heat loss takes place on the surface. Now it is a geometrical fact that in a small body there is more surface relative to volume than in a large one. Since in a small bird there is more surface per volume of tissue, where heat is produced, than in a larger one, the tissues of the smaller bird have to be more active. This means the small bird has to eat more per unit of body weight than a larger one. In a cold environment, unless food is always present in excess, sur-

Rock ptarmigan in white winter plumage. These fowl-like birds are winter residents in the Arctic. *P. Paulsson*



On its nest, a depression in the stony ground, the ptarmigan in summer plumage is inconspicuous. *Martin*

vival of larger individuals will be favoured. In the Arctic, two thirds of the bird species are pigeon size or larger; farther south birds of this size amount to less than a third of the total species list. Although most arctic birds which also range well into the temperate zone follow this rule, there are some notable exceptions. In the Canada goose, for example, the largest races are those breeding in the southern part of its range whereas the arctic races are the smallest ones.

The cyclical fluctuations of lemming populations and the secondary cycles of the fur bearers which feed principally on lemmings are well known. It is less well known that a number of arctic birds are also affected by the lemming cycles. Birds which fluctuate with the lemmings are the short-eared and snowy owl, the rough-legged hawk, and the pomarine and long-tailed jaegers, which all prey on lemmings. These birds not only increase in numbers in localities where lemmings are at a peak but they lay larger clutches of eggs in peak years. In years of low lemming population many of them do not nest at all or they lay less than the average number of eggs. A study of the effect of lemming numbers on some of their bird predators has recently been made in the Point Barrow area of Alaska.

Studies in the Churchill area have shown similar fluctuations in the local population of snowy and short-eared owls and rough-legged hawks with the local density of collared lemmings. It has even been possible to correlate the invasions of snowy owls into New England, south of the owl's normal winter range, with the lemming cycle at Churchill over a fourteen year period. Snowy owl invasions were found to coincide with the lemming crashes farther north. It has been mentioned that this owl is one of the few birds of which a great proportion normally winter in the far north. When lemmings in the owls' breeding range are at a minimum almost all the owls are forced to emigrate in the winter. This brings about a temporary enlargement

The pectoral sandpiper breeds across the Canadian Arctic west of Hudson Bay and migrates to South America to winter.
E. O. Hohn

of the wintering area to regions farther south than those regularly visited.

Willow and rock ptarmigan also show marked fluctuations in population. There is not enough information for Canada to indicate whether these fluctuations are regular or not but in Norway both ptarmigans are said to show regular four year peaks coinciding with the lemming peaks. In this instance, the connection between lemming and bird is an indirect one. Animals that prey on the ptarmigans—foxes, snowy owl, and the gyrfalcon—live mainly on lemmings when these are readily available. When lemmings decline, these predators are forced to look mainly to ptarmigans for their sustenance and this decreases ptarmigan numbers. As lemmings increase once more in subsequent years, the pressure of predation on the ptarmigans decreases. Some support for this explanation of ptarmigan cycles is found in the fact that along the north shore of the St. Lawrence, willow ptarmigan show ten year instead of four year peaks. Here there are no lemmings and the cycle is basically due to the ten year cycle of the snowshoe hare. As is well known, predators such as red fox, lynx, weasels, horned owl, and goshawk fluctuate in numbers with the snowshoe hares and presumably prey more heavily on ptarmigans in years when the hares are scarce.

A further element of irregularity in local polar bird populations results from late springs or inclement weather during the breeding season. There is, for example, a very large breeding colony of lesser snow geese in southwest Banks Island (*Beaver*, Summer 1954). In years of late springs, many of these geese do not reach the island at all but nest instead in the delta of the Anderson River and on the Cape Bathurst Peninsula over which they normally pass on their northward migration.

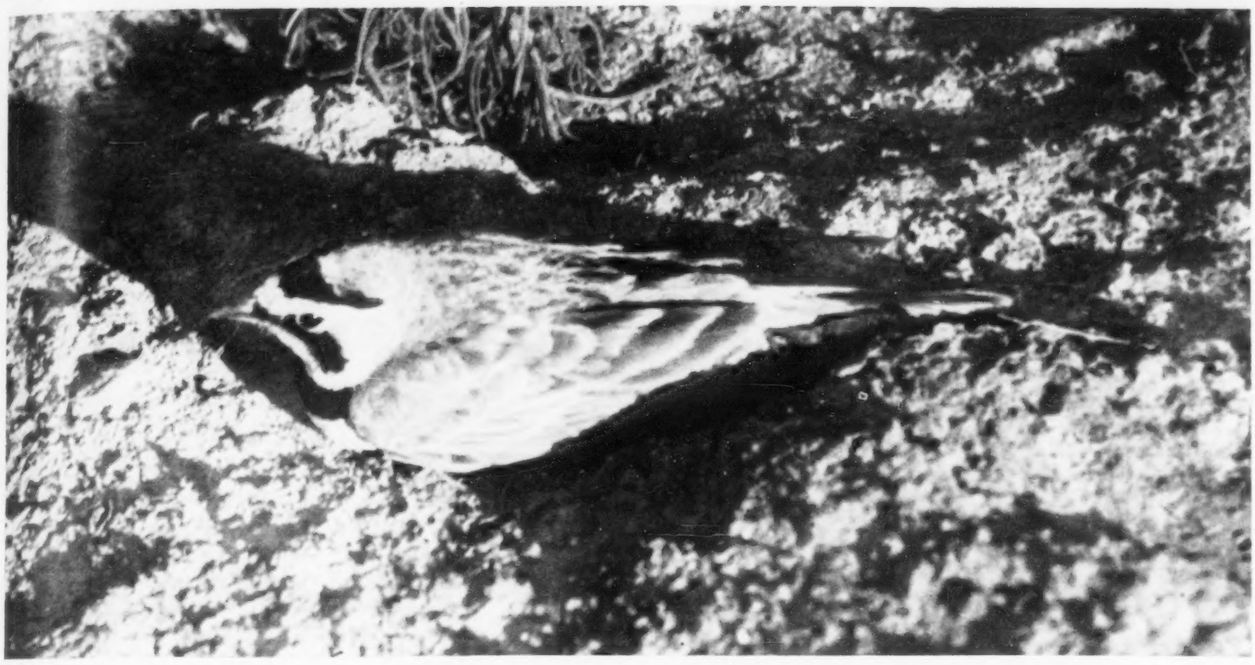
It is well established that there has been an improvement of the arctic climate in the last fifty or so years. This has had a definite effect on bird distribution. For example, the pintail and meadow pipit formerly merely known as accidental vagrants in Greenland now nest regularly in the southern part of that island. In addition, some of the birds characteristic of the high arctic region

An old-squaw duck on its nest which is made of grasses and other small plants and lined with down.
W. F. Joss

Distraction display by a semipalmated plover. Adult birds perform in this way to decoy predators away from their young.
R. T. Congdon

A horned lark, one of the few song birds of the Arctic.

E. O. Hohn



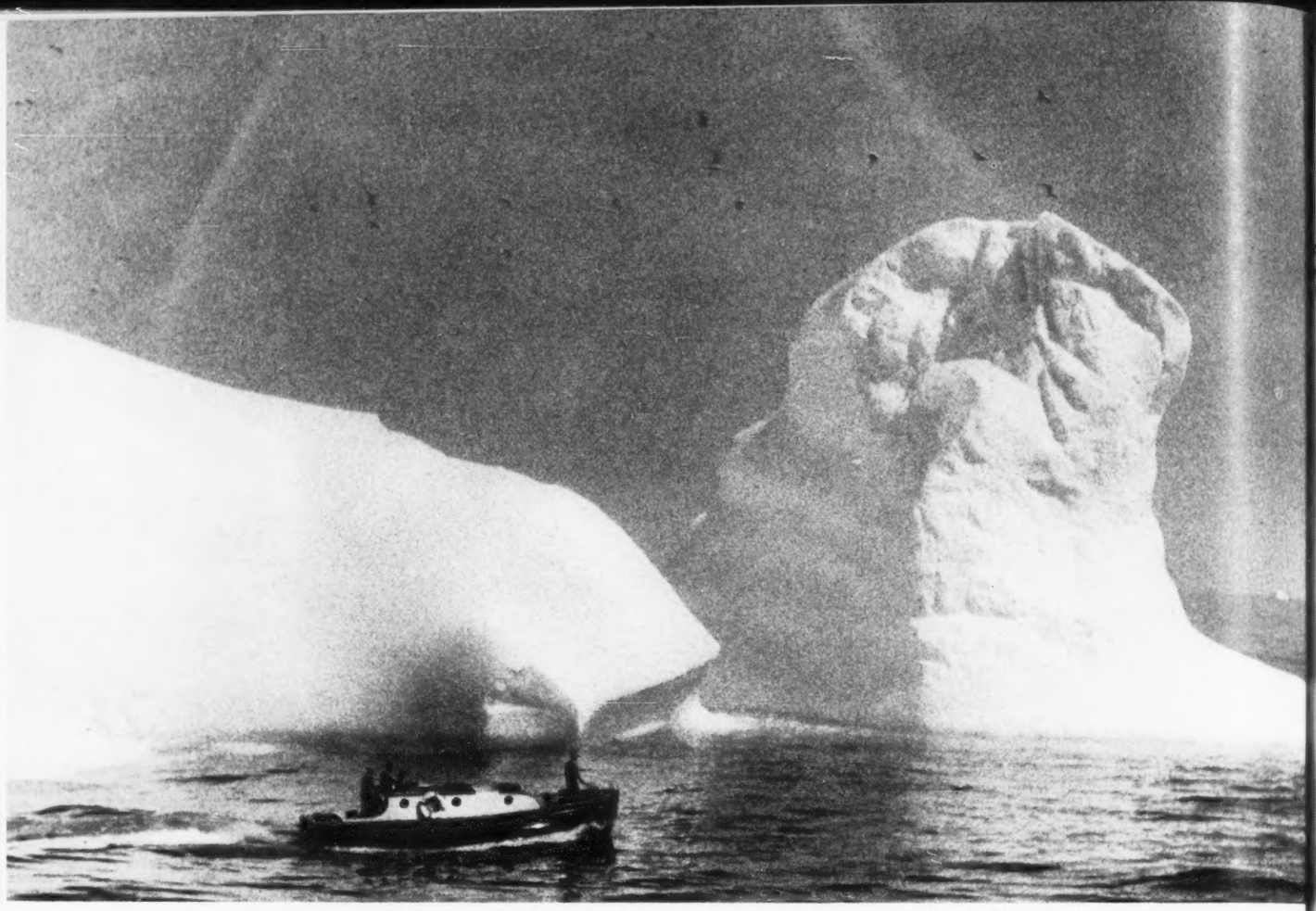
have stopped using the southern parts of their former breeding areas.

Such changes also appear to have taken place in Canada. Chief Factor Roderick MacFarlane who founded the Hudson's Bay Company trading post at Fort Anderson in 1861 and who incidentally was the first white man to explore the Anderson River in 1857, has left us a complete account of the bird life of that area in the 1860s. In 1955, I was able to spend the summer at the mouth of the Anderson. When comparing what I found with MacFarlane's account, it was clear that there had been a shift in the local bird life similar to that noted in Greenland. For example, MacFarlane found no duck hawks (peregrine falcons) north of latitude 68°. In 1955, they nested not only as far as Cape Bathurst, about 70°, but were known to be nesting even farther north in Banks Island. In the 1860s the willow ptarmigan was said to be scarce beyond the tree line, where I found it abundant. I also found the yellow warbler and the rusty blackbird nesting to about latitude 70°, whereas ninety years before these birds were unknown beyond the tree line. On the other hand, one looks in vain nowadays for some of the high arctic birds which MacFarlane found nesting and which now breed farther north.

No doubt such climatic changes occurred before arctic temperatures were recorded and northern and southern limits of breeding ranges in the Arctic have probably always been subject to change.

On the whole, birds are very sparsely distributed in arctic areas compared to the temperate zones. Local aggregations, where birds are really crowded, do occur in the nesting colonies of snow geese and in the breeding rookeries of some of the auks; a fairly rich and varied bird life is also found in certain of the deltas of major rivers and in favoured areas of coastal tundra.

Because of the almost complete absence of cover on the tundra birds can be seen for considerable distances, depending of course on the bird's size. Based on this fact, T. H. Manning has worked out a very simple technique for establishing arctic bird populations. A record is kept on all long walks of the number of birds of each species seen. The average number of each species per hour of walking is then calculated. On the assumption that one walks in tundra country at about two miles per hour, and can see large birds up to a quarter of a mile on either side, the average number seen per hour is the number per square mile. For the smaller birds, the number per hour is multiplied by a factor depending on the size of the bird. For the smallest birds the factor is ten. Using this technique, the total summer bird population of Banks Island, 24,600 square miles in area, was estimated at 1,750,000. This can be compared to an estimate of 80,000,000 breeding birds for England and Wales, an area a little over twice the size of Banks Island (actually 58,340 square miles) made some years ago. ◆



FOUL AREA . . . NOT EXAMINED

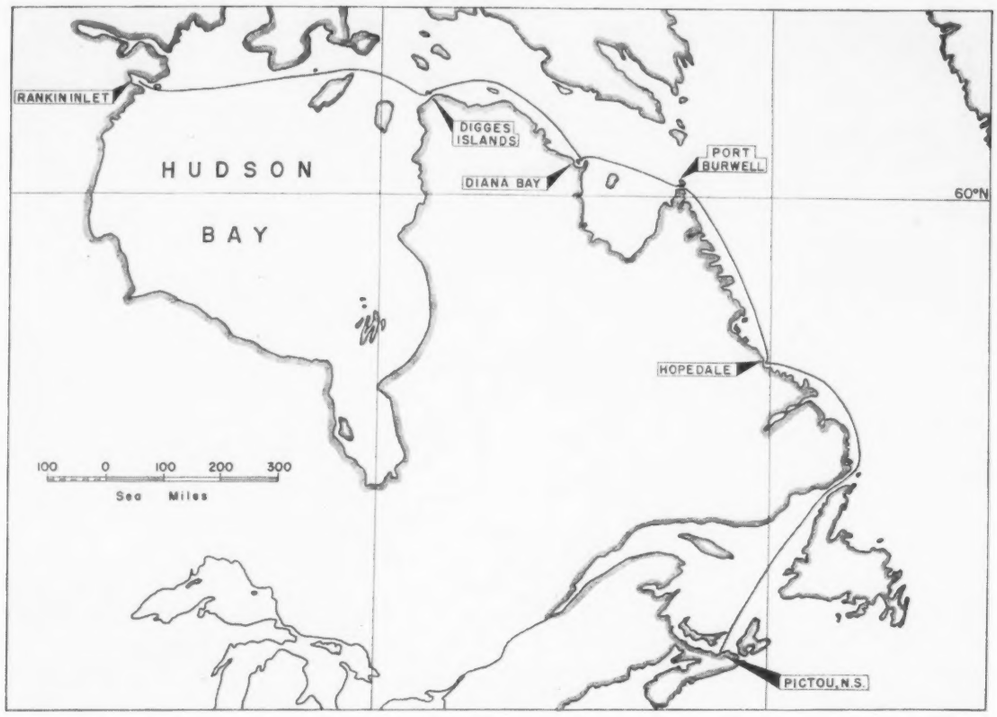
BY J. P. OUGH

Hydrographers convert the foul areas of uncharted waters into safe highways for shipping. Mr. Ough, whose own photographs illustrate his article, is with the Canadian Hydrographic Service and has spent the last two seasons on northern survey work.

WITH many blank spaces on northern charts, marked only by such cautions as "Foul Area—Not Examined," the expanding sea traffic in sub-arctic waters calls for more and more detailed surveys of unknown areas. Keeping one pace ahead of the growing activity in these regions, the Canadian Hydrographic Service, charged with mapping Canada's vast coastline, must be ready with accurate charts of those places about to burst into life. Each year, from June to October, a chartered vessel is sent into Hudson Bay and kept busy making hydrographic surveys at points where future developments are expected to attract deep sea ships.

For several seasons past, the surveying crew in Hudson Bay has operated from the motor vessel *Theron*. This ship came into the spotlight a few years ago, when she was chosen to take the Commonwealth Trans-Antarctic Expedition down to the southern continent and land them on the ice shelf of the Weddell Sea. Built as a sealer in 1949 and strengthened for ice navigation, she regularly takes an active part in the annual seal hunt off the Newfoundland coast, during the early spring, before preparing for her spell of government work in the sub-arctic.

of the sturdy
ding launches from
". "Theron" at work.



The first two weeks of June have passed by the time the survey party goes aboard the ship at Pictou, Nova Scotia, where the 850-ton *Theron* fits out for her northern trip. Boat cradles are built on the long foredeck to receive the three sturdy sounding launches. Painted bright orange so that they will show up well among the scattered ice floes of the north, these launches are equipped with electronic depth sounders, plotting tables and radio telephones. Drums of gasoline for their engines are lashed into place on deck and thousands of feet of lumber are stacked in the hold to be used for building triangulation stations and sounding beacons on the treeless coast of Hudson Bay. A four months supply of food and fuel must be taken along as well as a vast amount of navigational and charting equipment, needed for a full scale mapping operation.

Heading northwards across the Gulf of St. Lawrence and up through the Strait of Belle Isle our sturdy craft is in familiar waters. Now we corkscrew on through the tumbling swells, but a few months ago *Theron* was butting heavy pans of ice in these waters as she searched for valuable herds of seals.

After brushing through the light pack ice off the Labrador Coast we reach the open sea and begin our voyage assignment. Every four hours the ship heaves to and a bathythermograph is swung outboard and lowered deep down into the icy water. Inside this instrument, on a smoked glass plate no bigger than a large postage stamp, a needle inscribes a graph of the water temperature from sea surface to ocean floor. This is carefully filed away for future use by the oceanographers in their studies of the ocean masses. This operation over, the telegraphs are rung for full speed and again we steam steadily northward.

Half way up the coast of Labrador we run into heavy ice pans through which the ship must zig-zag her way. Thicker and thicker the pans become, until, to continue on our course we must slow down and begin laboriously butting and breaking the individual floes. Now and again, the bows, trimmed high for passage through the ice, will ride way up on some extra heavy pan. There we remain stuck at a dizzy angle until engine movements work us off or the weight of the ship finally breaks the floe in two. Solidly packed floes may stop the ship for hours or days.

With days of comparative idleness, the survey staff and launch crews devote their time to reading, yarning, or individual hobbies. Amateur photographers get ample scope for shooting pictures of birds, seals, icebergs, and the coastal mountains that tower to snow capped heights.

Captain Maro and his crew, former Norwegians who have adopted Canada as their new home, have their hands full, safely navigating *Theron* through the ice fields. Their ship was not lightly chosen by the British to take their expedition to the Antarctic. Equipped with a hardened steel propeller instead of the usual bronze, with her toughened stem for breaking ice, and manned by an experienced sealing crew, she can get through ice that would finish many a larger vessel.

For navigating among the floes, the 198-feet-long ship, has a steering position in the crowsnest, high up the foremast. From here the officer of the watch can steer the ship directly, by means of a small electrical steering gear, to the best possible advantage, as his increased range of vision enables him to spot leads in the ice.

Rounding Cape Chidley *Theron* puts into Port Burwell. This "port" consists of one disused Eskimo hut, but in the shelter of the cove the ship is able to move close under the sheer rocky cliff and take fresh water from the small stream that tumbles over the edge.

While the ship is watering we see our first Eskimo hunters. They come eagerly up to the ship, armed with rifles and harpoons and with the bottom of their peterhead boat a bloody mass of fresh seal meat. Some of our crew members try their skill in the two kayaks they carry on board, whilst the Eskimos themselves are pleased to get some cigarettes and sugar as they look over the ship.

After a few hours, with the fresh water tanks full, we set course for Diana Bay to pay respects to our friends from previous years among the white people and Eskimos living at the base. A film show for the natives is the highlight of our brief stop. A reel in colour, taken the year before, of these same Eskimos, brings loud and boisterous handclaps of recognition. Then with the second engineer providing the music on his battered fiddle, and clad in their bright Scottish tartans, they dance us a jig or two on the foredeck. An old woman, puffing at her pipe, is one of the most active dancers. The small child on her back gazes out with stoic resignation at the spectators, as she is bounced about and whirled around in time to the music.

Time now to be on our way and so one of the launches takes our visitors back on shore and then with the ebb tide scraping large ice floes down the ship's sides, the anchor is slowly raised and we swing round to make for the open water of Hudson Strait.

Passing along in the brilliant sunshine, we see many seals basking on the ice pans, with now and then a pair of walrus showing their long ivory tusks, from which the Eskimos carve their delicate work. Just before reaching the top of Hudson Bay, we slow down in passing close to the towering cliffs of Digges Islands. This famous nesting ground for arctic murres is well worth a visit. The birds can be seen in their thousands all along the rock face, the ledges of which are littered with the haphazard laying of their eggs. With hundreds constantly leaving and returning to their nests the air is thick with them. Many hundreds more are sitting on the water all around and a blast from the ship's whistle makes so many murres take to the air that one would think that all the birds in the Arctic were gathered in this one spot.

At last we reach the scene of this year's survey project, Rankin Inlet on the northwest coast of Hudson Bay. Dead ahead, at the entrance to the inlet, lies the great mass of brilliant quartzite so aptly named Marble Island. Eight miles long by two miles wide and surrounded by dangerous shoals, it is as cold and uninviting as only a slab of marble can be. Here in a hidden harbour at the east end were found in 1767 the remains of Governor James Knight's party, who perished with their two ships between 1719 and 1721. A small natural harbour at the western end was used long ago by hardy whalers. A tiny isle nearby is grimly named Dead Man's Island because it was there the whalers used to bury their dead, amid mounds of stones in Eskimo fashion.

We grope our way slowly past the island and enter the inlet. We have no charts to help us pilot our way in, for none are published. That is the reason we are here, to make an accurate chart for the ships that may be using these waters in the near future. Ships that will be carrying out the rich ore from the nickel mine that has mushroomed up amid the bare and desolate wilderness on shore. As the mine is situated at the western end where we intend to start our survey, we must take a chance on the unknown dangers in the inlet and pass along its full length.

As a safety measure, two of the sounding launches are lowered and precede the ship, their sounders clacking away. Each time they run into shoal water they give warning over the radio of the danger that is being shown on their echo graphs. When this happens, the ship stops her engine and patiently waits while the launches search around for deep water through which we may bypass the rocky ledges. Slowly we make our way along the thirty miles of the inlet until we near the mine site, where we can see the few scattered buildings on the bleak shore.

Getting close now, and then, as we cautiously pass down a narrow passage between two islands, we get sudden warning of a shoal ahead. Too late to turn in this narrow channel with the flood tide following, we must take a chance and somehow squeeze by, perilously close to the rocky shore on one side and within only a few feet of the jagged reef on the other. With a gasp of relief we enter the deep water of a small bay and thankfully drop anchor in the safety of its shelter. Our outward trip is over. Tomorrow we start work in earnest

After breakfast each survey launch, manned by two surveyors and four seamen, is loaded with lumber, survey instruments, and food box, and sets off along the coast and in between the islands.

In our thirty-two-foot launch, we make for the spot where a bronze plug was cemented into the bedrock of a large island by the Geodetic Survey of Canada, over

In Diana Bay, Eskimos listen to a lively tune on the fiddle. Minutes later they were whirling about the crowded fore deck as they danced a jig.

twenty years ago. If we can find this mark, linked as it is to the North American Datum in Kansas, we can base our triangulation on it and thus save making many astronomical observations. As we race past the islands we note the positions of all the high points that we pass. High cliffs, lofty peaks and inland hills are all thoroughly examined as suitable points to erect our survey beacons. Flocks of eider ducks take to the air at our passing and ahead the heads of inquisitive seals are quickly bobbed below the surface as we speed towards them.

The light wind is not enough to disturb the surface of the inlet and the only broken water is behind our boat, where the dory rides easily on the crest of our wash at the end of her tow. Ninety minutes since we left the ship and already the sun is well up from the horizon. A clear day to start our survey, but a lot of bad weather will come before the job is done. Now in the warm fifty-five degrees temperature, we can hardly realize our latitude is sixty-two degrees north.

Easy now as we approach near our objective. That must be the site of the geodetic plug, over there, on top of that bare rocky hill, overlooking the small bay. Swinging round in to shore, the dory is pulled alongside and in we clamber, leaving one man to watch the anchored launch. Have we got everything? Map, binoculars, transit, notebook, camera, lumber, hammer and nails, whitewash, flags—nothing forgotten? Ah yes! The insect repellant. Those mosquitoes will be buzzing around on shore in clouds. Push off and away we go, under oars, for the beach. Now we can see the bottom, through the clear water. Jagged rock formations covered in kelp with here and there a patch of sand. A gentle roller helps us beach the dory where we make it fast to a large boulder. Now, fully loaded we start the climb to the top of the hill. Only a pimple this time in comparison to some of the peaks we will labour up in the next few weeks, covered in sweat despite a chill wind and plagued by mosquitoes, but after our long sea voyage even this small hill will tax our breath. At the top our gear is tossed down, and out we spread, looking for the two inch diameter bronze circle that was fixed in the rock years ago. A sudden cry from one of the men and we hasten over to see the plug that will save us so much work. Scraping off the deposits of the years we can plainly see the inscription "Geodetic Survey of Canada, No. 14 1932."

Setting up the theodolite on its tripod with the optical plumb line over the centre of the bronze plug, four sets of

sun sights are taken to obtain an azimuth. This will enable the triangulation to be correctly oriented and the latitude and longitude of all the survey beacons computed.

After these observations, using the lumber brought, we build a triangulation beacon over the mark. Twenty feet high, surmounted by coloured flags and with a good coat of whitewash, it can be seen for twenty miles. Anchored down by piles of heavy rocks, with the mast directly over the plug and enough room for an observer with a transit to work underneath, this station will stand for two or three years. Before we return to the ship tonight we will be building half a dozen similar beacons and as many smaller sounding marks along the coast.

Meanwhile, one of the other launch crews has erected a wooden tube at the water's edge, inside a sheltered cove, which will house the automatic tide gauge. From now on, the continuous tidal graphs being recorded will provide us with information so that we can determine the level of the average low water. This will enable all our future soundings to be recorded in strict relation to one another no matter at what state of the tide they were taken.

A few days later the area is covered by a network of beacons, flying different coloured flags, built by the crews of the three sounding launches. With the inlet covered by sufficient survey stations, the time comes to make transit observations from the main points and record the angles that will enable their positions to be calculated. But first we must measure a baseline for our triangulation net, by chaining along ten thousand feet of beach that is exposed at low water, the only level place to be found in the area.

Now begins day after day of patient, methodical observing. Days of torment by the mosquito that gets in an exposed ear just as the final reading of a five times repeated operation is being taken. Days of eye-watering cold winds and bright sun reflecting down the telescope to strain the eyes. Intermittent haze refraction and mirages that wobble from side to side and slowly collapse. Pieces of rock that look like stations and stations that look like pieces of rock, pencils that fall down little crevices between the rocks and notes that blow away.

We cannot afford the time to wait for good observing weather. When we see the geese head south, then so must we, before snow and ice send *Theron* bucketing back down the Labrador Coast. But then there are the days when the work goes well. A friendly breeze keeps off the pests. The tame little ground squirrels play around the tripod and the far-off stations stand out in boldest relief. The air is clear and the flags stand out sharp, the pencil stays put and the angles jive in close.

At last the observations are complete and the geodetic positions of all our stations have been computed. Plotted

Triangulation station "Skull" being built; so named from the number of human skulls found on this small island. Whole skeletons were found among piles of rocks, the remains of an Eskimo burial ground.

on the main field sheet from which are made sounding sheets for the launches, they will control the locations of all soundings taken by the boats.

Now we can begin the job that puts hydrographers apart from the surveyor on land. This is the task of running sounding lines over the whole area, fixing portions of the coastline to facilitate the use of air photos, accurately positioning all the shoals and rocks that could menace ships and establishing depth contours.

On rough days and smooth the launches go out, maybe thirty or more miles from the ship and each other, running lines of soundings up to fifteen miles long. The lines may be run anywhere from one hundred to a thousand feet apart with position finding by double angle sextant fixes taken every three minutes. Steering by boat compass becomes very difficult in these regions of extreme magnetic disturbances and natural objects and clouds are frequently used as steering aids to run straight lines.

Out in the sounding launches we are no longer troubled by mosquitoes. In their place we have the sting and lash of ice cold spray, driving the salt into our eyes as we peer through the sextant telescopes, the water blurring the

mirrors and hiding the beacons. A hard enough job at the best of times to hold the sextant steady in a pitching motor boat, without wet faces and frozen hands.

Even in a survey launch we sometimes hit the top of some jagged peak that rises abruptly from twenty fathoms, and lay keeled over on our side in a foot or two of water until one of the other launches comes to our aid and pulls us off. To fix dangerous rocks that are awash, we creep slowly up from down wind amid the spray, and take our angles scant feet from where the waves explode into foaming breakers.

Other days, we glide over the long smooth swells to waltz time, our heavy jackets off in the warm sunshine and work becomes a pleasure. Now we can spare an eye for the seals and birds and for the strange rock formations that show up clearly both above and below the cool clear water. The stations are easily seen, these bright, calm days, and when sounding near the shore we may sometimes disturb a caribou hiding from the sun among the rocks on the beach.

Evidence can be seen on shore that the water level in bygone years was much higher than at present. Many an obvious beach, certainly not formed by grounded ice floes, lies thirty or more feet above the high water mark of the prevailing tides, which seems to show that the land is rising.

Gradually the lines of soundings grow and the blank spaces on the field sheet are filled in with closely spaced figures indicating the depth. New shoals brought to light are re-examined and filler lines run where the coverage is incomplete. As the weeks go by a chart is born and our mother ship the *Theron* can move with safety about the inlet.

With three thousand miles of sounding to our credit, we can affort to relax some Sundays. After twelve or fourteen hours each day in a tumbling launch, a day passed peacefully fishing the inland lakes is well spent. On our trips ashore we see large patches of ground churned to mud by vast numbers of migrating caribou a few weeks before. Our heavy catches of lake trout, grayling and arctic char, are taken from peaceful virgin lakes that have never before felt the stroke of a fly line, or heard the hiss of a spinning reel clutch.

The end of September brings colder air, and often in the morning the launches crackle their way through a thin layer of ice in the sheltered bay. Long wavering formations of ducks and geese are seen flying southwards and large flocks in the water are mustering for flight.

The next few days snow falls frequently and the weather turns more blustery, making launch sounding a fruitless chore. So with October already passing, the anchor is raised and with the confidence that stems from knowledge, *Theron* sails through the islands and down the inlet, heading for the south and home.

Another survey season has finished with information enough for a brand new chart, another place in the Arctic has been made safe for navigation, and another part of the north is ready to link up with the outside world. ◆

The author observes a round of angles with a "Wild T2" theodolite underneath one of the triangulation stations.

A seaman on one of the sounding launches numbers the fixes on the echo-graph with an electric pencil.

Photographs by RICHARD HARRINGTON,
with one exception.

Lucy of Povungnetuk

BY MALVINA BOLUS

Acquaintance with Lucy was made possible by the help of her friend Frederica Knight, wife of store manager Ralph Knight, who speaks Lucy's tongue and for some years has been the only white woman in the settlement. The writer stayed with her earlier this year.

LUCY sat in the many-windowed schoolroom, concentrating on her work. Had she raised that dark head topped with a green ribbon bow she would have looked out on a white and blue world. Under a cloudless sun-filled sky the world was snow-covered; not with the smooth, soft snow of southern Canada, but the hard-packed wind driven snow of the Arctic, jumbled and hummocked, that sings to the pressure of a footfall and echoes with a hollow sound. Crisp shadows emphasized the unevenness of the surface, dark windswept rocks broke through starkly over the rolling country that in summer would dissolve into river and hills.

She was too busy to look on what was, after all, a familiar scene because she was learning how to knit a diamond-patterned sock. Eskimo women have many skills and are usually expert at sewing but knitting was new to them, so once a week the wife of the H B C store manager gathered a group to show them how to knit socks and mitts or other garments. It was not altogether a one-way class but rather an exchange of learning, for the girl who was teaching her friends to knit learnt herself from them how to make the tightly crocheted brightly patterned woollen caps that are worn under the parka hood by the men in this region of the eastern Arctic.

It was time for Lucy to go, for she always had much to do. She was wearing a scarlet short sleeved sweater over a long sleeved brown sweater; she put on her blue cardigan and satin windbreaker. She adjusted the bright plastic barrettes in her gleaming hair—worn shoulder length and home permed, though many of her friends still wore braids looped across the back of their heads—tied on her silk kerchief and wrapped a tartan wool shawl round herself. The rest of her costume was a print skirt worn over grey slacks, two pairs of duffle socks—one pair long and embroidered on the turned-down top—and skin boots, shorter than the usual knee-length wear, topped with white fur. These were unlike the local kumiks (boots with leather moccasin-like foot and sealskin legs) being a gift from her friend Freddie who brought them from Cape Dorset.

She hadn't far to go—down the hill from the school house to where a cluster of snow domes marked the homes of several families. The dogs that were wandering around or curled up sleeping paid little attention as she approached; here was the fish spear and a knife stuck in the snow at one side, there the inevitable line of washing swaying stiffly in the breeze. Two komatiks (sleds) were upturned against the side of the building. Lucy rounded the shelter wall of snow blocks to the opening away from the wind, stepped

Lucy cleans her window

down and then ducked through the first low archway that led to her home. A few steps upright, then doubled up again, with a knack of sliding through the archway on one foot on the polished ice beneath it. Ledges on either side of this small outer igloo* held the sacks of frozen fish used for dog food, perhaps some seal meat and better fish for the family, equipment stored away till the summer, and a spare mat of willow twigs.

The next archway had a substantial wooden door; through this, a step up and Lucy was in the big snowhouse that was her home. The floor space was small and on one side of it was a jar seal lying on its recently peeled skin from which her father was cutting the thick layer of fat.

Apart from the small floor space, the rest of the igloo was a platform about two feet high, the part facing the door the living and sleeping space. To the right of the door was the kitchen area where a primus was burning and the kettles and pans, the flour and tea and other foodstuffs were kept, among them a pan of dough ready for bannock that Lucy had mixed up from flour, lard and baking pow-

*Though igloo really means any building it is used here to denote a snow house as distinct from a stone or wooden structure.

A coil of bannock cooks over the primus set on the floor of the igloo.

der earlier. Here too was her precious ulu, the half-moon shaped knife women used for so many things—scraping skins, cutting clothing, preparing food. This was a big one her father had made from a saw blade. Above the stove was a rack where an assortment of mitts and socks and boots were tossed to dry. On the other side of the entrance another primus was burning under a kettle of water, another rack fixed into the snow wall above it, and on the ledge a bowl of partly melted seal fat, some caribou clothing, some goose-wing brushes, a rucksack containing the tools used in carving stone.

Caroline, Lucy's mother had been looking after things and doing a bit of sewing, for the sewing is endless. It is a wonder to see her threading a needle with her tongue—for Caroline is blind. The sight of one eye failed some years ago, before she went "Outside" for treatment in a sanatorium; before she came back the other eye had gone too. But she finds her way around, is cheerful and friendly, and leads a useful life. Last year she had even prepared a sealskin, folding it over the semi-circular frame and stretching the edges which were kept taut with thongs, but for the most part she did the mending.

Lucy sat on the wooden-fronted edge of the platform and patted the snow off her boots before climbing up. The snow of the platform was covered with mats of willow twigs bound together, then with fur robes and on top of them blankets and sleeping bags and quilts. It was a comfortable place to sit when you had the habit of sitting with your legs straight out in front of you. This was a very big igloo, and so high that the builder had to stand on boxes to put in the roof blocks. It was warm compared to outside (though not warm enough to take off more than an outer coat) and dry and surprisingly bright, for a certain amount of light penetrated the snow blocks and there was a big ice window over the door.

It was all very tidy. Around the wall were boxes and cartons, Lucy's sewing equipment, neat bundles of clothing. Plastic bags held personal belongings, pieces of material, wools for embroidery, the multitude of odds and ends that are part of any house.

Everyone was busy. Peter Tukaluk, Lucy's father, left the seal he had been cutting up (it would remain frozen on the floor), poured some water into an enamel bowl to wash his hands, brought over his bag of carving tools and took out a partly finished stone carving. He would not have done the preliminary work on his piece of steatite indoors for chipping with the axe is dusty work and better done outside. His main work, like most of the men in Povungnetuk, was carving and in a day or two he could produce a piece of sculpture that would sell for several dollars. Lucy's sixteen-year-old brother Isarah was already on the platform, polishing with a piece of rag the carving of a bird he had finished the day before.

Soon they would be wanting food. Lucy put a deep iron pot full of oil on the primus and with a pair of scissors cut off a long strip of bannock from her basin of dough. Stretching it out, she coiled it into the fat. There it bubbled until it was crisply brown on the outside, bread-like inside and something like a fresh doughnut to eat. Bannock, fish, and tea were the staple foods, the fish frozen or cooked, with sometimes the change of seal meat, though the floe edge was far out and not many seal had been brought in this year. Later there would be birds and eggs, and in the summer berries, a few blueberries but mostly cranberries. After so long it was hard to wait for them to ripen and the small sour green berries were eaten eagerly as soon as they were formed.

Lucy's household work was not quite so hard now. For a time she had looked after three homes, her own, her parents', and her husband's parents. The cooking and

cleaning and sewing were never done. She had had to make bannock every day and she got so sick of it always frying that she didn't want to eat it. Then she had lived next door to her in-laws but now they were farther off and she couldn't be expected to be there quite so much. Now she and Mathewsie and her parents were living together. Besides the four of them, there were Lucy's three brothers, Adamie who was grown up but not yet married at 20, 16-year-old Isarah, and Jimmy who was 5, and there were Lucy's own 5-year-old daughter Sarah and three-year-old son Billy. Looking after the igloos and the cooking was a good deal of work, and there was always washing on the line. There was not very much water—it all had to be carried in pails from the hole cut through the ice on the river—but there was lots of soap. Like her friends, Lucy did not rinse the clothes she had washed but hung them out with the fresh smell of soap in them. When the soapy smell went off, it was time to wash them again.

But all that was nothing to the sewing! With a husband, three brothers and a son to be clothed, Lucy had to be not only a good seamstress but fast. The men's heavy trousers

Right: Lucy demonstrates the best way to soften a sealskin boot. Note the fine waterproof stitching and patched sole.

Below: While Lucy mixes dough for bannock, Caroline gropes for her mending.

Below right: Time out for a friendly visit. Lucy and Freddie Knight chat outside Lucy's house.

Mathewsie, in his caribou suit, sits by the shelter wall at the entrance to his home. A sled is on top of the porch.

and shirts might be bought in the store, but when it came to parkas, mitts, caps, and footgear, Lucy and her mother made them. It was some time since she had made a caribou suit for the deer were very scarce and a suit had to be treated with care and made to last, for there was nothing that could keep out the chill in the same way. Not merely content to make a warm well-fitting suit, a good wife would make it ornamental as well with inset decorations of lighter fur. The artiggi, made in one piece with the hood and no front opening was worn with the thick soft fur inside; the kulitak—when there were enough skins to have one—had the fur outside. When there was no kulitak, or if it was not cold enough to wear it, a drill or poplin parka fitted exactly over the artiggi. This parka, which might be coloured but was usually white for the men, was trimmed with many rows of different coloured rick-rack braid around the hem, up the sleeves and on the hood. Failing skins, duffle parkas were warm and could be made very attractive with embroidery on front and back and round the hem and sleeves. Lucy never used a pattern to cut them out; she could judge by eye how the size would work out and the peculiar way of cutting was long familiar.

Hands and feet must be kept warm, and there would be duffle mitts to be worn under skin mitts of sealskin or caribou, and duffle socks—long ones well fitted and smoothly joined by hand without seam ridges, the tops turned down and embroidered, and short ones to slip over them, maybe caribou socks too, then the kumiks or skin boots, the foot of leather, braid trimmed, the leg, tied below the knee with a twisted cord of bright wool, of seal fur worked in a pattern of stripes or diamonds. A pair of summer boots (sealskin with the hair scraped off) on the drying rack had got damp and stiffened. Really, there was only one way to soften them satisfactorily; Lucy reached for a skin boot and started to chew firmly on the hardened sole. When it was softened and rubbed, she put it back and decided to do some work on a skirt she was making. Putting aside a plastic bag containing wools for embroidery and for making the attractive sashes that she sometimes fingerwove, she took a length of cotton print from another plastic bag. From its cotton wrapping near the wall she took her well used and slightly battered sewing machine and sitting straight-legged placed it on her knees. What a help the machine was, for the long seams on duffles and for making dresses, and even for sewing the tents to which they moved in the summer.

While Lucy sewed, Mathewsie her husband was doing a bit of carving. Mathewsie was a hunter and trapper rather than a sculptor and often hunted for the camp, but everyone did some carving now and then. It was always salable and helped the family income. Lucy glanced at him; short and strong, black hair straight cut above the dark eyes in his brown, alert face. She was used to him now, in fact quite fond of him, but it had not been like that at first. She had been married at 18 and in the conventional way the marriage had been arranged between her parents and Mathewsie's step parents. It was not at all to her liking, but after a year or so it had turned out well enough.

The door opened and in tumbled a bunch of gnome-like little figures. The big dark eyes looking so solemnly out from the face-encircling fur of the peaked blue hood were those of her son Billy. Billy who had been born Outside and was a stranger to her when she first saw him. Back in 1955, when she had been married about two years, Lucy and Mathewsie, her parents and her brothers had all been taken out for treatment in a sanatorium in the south. Her husband and her father were kept for only six months and then returned home. A few months after Lucy went to the hospital Billy was born, but she was not to see him while she was there. Billy was sent up to the hospital at Moose Factory to be looked after. It was a year before Lucy was released and put on the train for Moose. When she got there a little boy was handed to her, a little boy she had never seen. How was she to know if he was her child? She gazed at him searchingly and decided he looked very like his father.

And now there was her fine sturdy boy, romping with his playmates, tumbling down the hills, sliding on his little sled. Certainly it was easier for them than for some of the others. Not so long ago a group of four-year-olds had returned after spending two years in the hospital. They had grown from babies to little boys and girls with white man's

Peter shapes a piece of soapstone while Lucy sews and Billy tackles a candy. Lucy's father hurried over to be in the picture; he would not normally sit on the platform with all that snow on his boots.

ways, used to white man's food and ways of living, not knowing their own people and, worst of all, speaking in a foreign language. When they went into an igloo they cried, and when they were offered their home food they would not touch it, and their parents could not comfort them and explain things to them, for they did not understand their mother tongue. Things were settling down now and they were feeling at home and were shy of using their English words, but it had not been easy. Thank goodness now only one or two had to go Outside each year and they were usually not away for more than six months.

Lucy looked round her tidy snowhouse and pulled her cardigan around her. It would be nice, she thought, to live in one of the new wooden houses at the top of the hill. Certainly it would be warmer than the igloo, but there was the dampness, which was not so comfortable and made it hard to dry the clothes properly. Charlie, who was so well known for his sculpture, was living in one of the wooden houses built last summer, but when the winter came and snow piled up outside and he built his snow-porches, the walls inside were always wet and though he made holes in the roof to try to improve it, the ceiling streamed with water so that he had to hang up cans to catch the drips. Koperkoaluk, who lived in the aluminum house was going to try building a stone wall outside it in the summer, for the stone house the missionary had built was much better—it was warm and windproof and dry. Then, too, it wasn't so easy to be sure a wooden house was always clean. After all, you could always scrape down the walls and floor of the igloo and when the walls blackened from the stove or the ice formed inside and chilled the place, you just built another house and moved in. This was their second for the winter and though the ice was beginning to thicken on the walls now at the end of March, it would see the winter out until they moved into their big tent for the summer. That was the cold time—when the snowblock porches were sagging and the walls were closing in and one had to move to the tent, though it wasn't really warm

enough. The autumn was bad too, when it was damp and windy and chilly in the tent and there was not the firm-packed snow to build their winter home. Well, perhaps they would make a stone and wood house one day—there were plenty of stones around for the gathering, and peaty mud to chink them.

Mathewsie was busy with the mud now. They had a big drumful set aside before freeze-up. He had set a square zinc tub in the outer porch—roofless but sheltered from the wind—with a fire in it and a big can set over it with the frozen mud. Now he was going through it, handful by handful, to pick out the stones and lumps so he could shoe the runners of the komatik for a trip to the floe edge tomorrow. When the fibrous mud was warm and clean he would coat the runners of the upturned sled, after that had hardened, sheathing it with a smooth-running covering of ice. The floe edge was a long way out and there were not many seals but it was worth a try for the meat would be a welcome change, the liver would be a delicious treat, the rendered fat would be most useful, and the skin would make a good pair of mitts, or maybe a new pair of boots for Mathewsie, or if his would last a bit longer, they could sell it at the store. Preparing the skin would of course be another job for the women.

Lucy took the coils of bannock out of the pot, saw that there was oil in the lamps, and gave the cooking platform a quick sweep with the goose-wing. That would look after tomorrow, for tomorrow was Sunday and no work that was not essential was to be done. There would be no carving, no fishing, no hunting, no sewing. It was a day to put on one's best, to attend the religious services, and to enjoy visiting one's friends. All morning, instead of dogteams passing along the river or drawing up to the store, people going about their business, and children playing on the slopes, there would be no signs of life except for the two or three igloos where, for want of a church, the Eskimo catechist and lay readers would hold the services. There would be prayers and readings from the Bible and slow rather dirge-like hymns. Then would come the time for visiting and in this community, larger than most, for carving was the means of livelihood rather than hunting which was done from scattered camps in other places, there were many friends to visit or to receive. They would slide in unannounced through the low doorway, slip down their hoods shaking the snow from them, perch on the edge of the platform while they brushed the snow from the soles of their boots, and settle down comfortably, legs outstretched in front of them, to drink tea and exchange news of local events. In the evening there would be another service. Of course there were family prayers too, every morning and evening and even when travelling these were not forgotten. When the temporary igloo had been built for the night and tea had been drunk and the travellers were cosily in their sleeping bags they would join in the daily prayers before settling to sleep.

But tonight was different, for there was a dance. Sometimes there were movies—documentaries sent to the school by the government, some of which were rather hard to comprehend—but every Saturday there was a dance, and sometimes an extra one, like last week when the team from Sugluk came in. The dance was held in the 'Eskimo room' attached to the mission and the priest would have made a tape recording of a whole evening of jigs and reels. About 8 o'clock the people would gather, peel off their outer clothes and be ready for the fun, the women in their cotton skirts and blouses or sweaters, their hair sleek and gay with ribbons or coloured wool and bright plastic barrettes. They looked a little clumsy with their sealskin-legged boots, but the leather feet were soft and supple and slithered easily over the floor as the square dances went on and on. The men might be wearing their heavy pants tucked into the high boots but some, particularly the best dancers would wear their store-bought clothes, cotton shirts with open neck, slacks and shoes. As they turned and twisted in the grand chains, the swing-your-partners and other figures, the women kept the rhythm with even steps but the men added variations with such rapid foot-tapping that the best trained tap dancer might have been envious of their unbroken exciting rhythm. The energy put into the sharp tapping—the louder the better—accompanied by the soft thump of skin-clad feet made the floor shake and the men so hot that their shirts were wringing with sweat before they stepped outside for a brief cool-off.

Mathewsie slipped his braid-trimmed parka over his blue shirt and khaki slacks. He looked well, thought Lucy, his hair slicked down and neatly trimmed at the back. This southern hair fashion was a change from the all-round fringe style that many of the men still used. She put on another cardigan and wrapped a shawl round herself. She was a popular partner but she would not be dancing tonight, for there was a new baby due any time now. She would join the onlookers and gossip and maybe have a word with the midwife. The Bay store manager might be there, with his wife, her close friend Freddie, and they would have news to exchange. There were always plenty of onlookers at the dances, sitting on benches or on the floor round the walls; men in their parkas and bright woollen caps; women who slipped off their parkas and shawls and made bundles of them for the small children to sleep on while older children who could keep awake sat round and watched, waiting for an interval to do a little dancing of their own.

Stretching a sealskin on the semicircular wooden frame. Cleaning and preparing the skins is always done by women.

On the floor of the igloo Peter slices the fat from a seal. It then goes into a pot for rendering.

Lucy sat and looked round the room. As usual, there were lots of people—they lined the walls, two deep in places and seemed to be piled up in the corners. It was hot and smoky and dimly lighted and high up at one end was a big drying rack. Some of the women did their laundry here and put the things up for quick drying but now it dangled mostly with boots and outer clothing and a few white fox pelts that someone had been cleaning and stretching. Mathewsie was dancing with Freddie who had come alone tonight after all. (She was the only white person there, but she was at home among friends). They were both good dancers and enjoyed the long continued dance that would have exhausted a 'ballroom' dancer. Soon after 11 the music stopped for the last time. Children sorted themselves out; babies were slipped into the back of their mothers' amoutik (long-tailed parkas), or maybe packed on the back of an 8 or 9 year old sister; other babies or older children would be tossed on to a woman's back, juggled there clinging precariously while she threw a triangularly folded shawl over them, crossed it in front of her and tied the ends beneath the baby.

They straggled out into the night, over the slope where someone had cut a few steps though it was still easy enough to lose one's balance on the hill the children had made slippery by sliding.

Lucy walked over the crunching snow to her igloo. Soon there would be more work, with a new baby to look after. More washing, more clothes to make, more cooking to do. Lucy had worked hard for most of her 24 years, except when she was in hospital, and she didn't mind work, but she hoped her grown-up brother would soon find a wife to look after him and help with the family chores. Oh well, it would all work out and people Outside were trying to do things to help. There would be a school for the new baby to go to—in fact a classroom had been opened last autumn though younger children still went to the mission where things could be explained in their own language. She would be glad when the nursing station promised for this summer was set up, and there might even be a church so they could all go to service together in one place. Her baby would probably see many changes. She hoped they would be happy ones.

It was dark out, northern lights a remote gleam, but dotting the hillside and across the river were bright pinpoints of yellow light. It might have been a Christmas card painting of a mountain town, deep blues and purples and welcoming windows, but as one drew nearer, the lights seemed to come from nowhere; the snow houses which they lit were part of the ground, inconspicuous without their rim of shadow cast by brilliant sun or moon, but from each window of solid ice shone a light that meant home. ◆

THE PEPPERC TR

BY PETER FLEMING *Author of*

THE two elks and the two black beavers which Her Majesty Queen Elizabeth II will receive from the Hudson's Bay Company this summer are typical of a form of rent which was fairly common in Crown leases throughout the Middle Ages. The Company's charter, granted by King Charles II in 1670, made their tenure of Rupert's Land conditional on "the Adventurers of England tradeing into Hudson's Bay . . . YIELDING AND PAYING yearely to us our heires and Successors . . . two Elkes and two Black beavers whensoever and as often as Wee our heires and successors shall happen to enter into the said Countryes Territoryes and Regions hereby granted."

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In law the liability to pay this rent is known as an Act of Petit Serjeanty. Had the Charter specified that the Governor of the Hudson's Bay Company must hand over the elks and the beavers in person, or perform some other prescribed service, it would have been an Act of Grand Serjeanty (such as is required, for instance, of the Houison-Craufurd family who, when the Sovereign comes to Holyrood House in Edinburgh, must bring a basin of rosewater, a ewer and a napkin for him to wash his hands with, and who discharged this duty for the Queen's father in 1937).

To King Charles II it must have seemed highly improbable that he, his heirs or successors would ever "happen to

enter into" the vast overseas dominions of which the Company's Charter made them free; and in nearly 300 years the rent has in fact only once previously been paid —to King George VI in 1939.

Arrangements of this agreeably lackadaisical kind, under which the tenant became liable for the rent only when the landlord set foot on his land, are often found in tenancies of this type, and not only in Crown leases. A Devonshire family, for instance, held its land "by the service of finding two Arrows, when the King should come to hunt in the Forest of *Dertmore* (Dartmoor)," and in Wales the Baskervilles had to give the King "a Barbd-headed Arrow, when he came to hunt in *Corndon*-Chase." Of the tenant of a Sussex manor it was required only "that he should find an Oare for the King's use, when he should passe over the Sea at the Haven of *Hastings*."

But although such obligations of Serjeanty lay lightly, and fell irregularly, on those from whom they were due, their feudal concepts are easily discernible; and it does not require a profound knowledge of economics to deduce that such leases would only have been granted to people of no particular consequence at a time when the value of land was low.

Sometimes the service demanded of the tenant was to the State rather than to the Sovereign. In Cumberland, for instance, certain manors "were antiently held by the service of Cornage," which involved "blowing a horne when any invasion of the *Scots* was perceived." In Shropshire Wrenoc, the son of Meuric, held—at an unspecified date—land "by the service of being Latimer, that is, Trucheman or Interpreter, between the *English* and the *Welshmen*." Public duties—though not of so international a complexion—were also performed by Sir Robert Plumpton, Knight, at Mansfield Woodhouse in Nottinghamshire. As quittance for one "bovat" of land (a bovat—from *bos, bovis*—was a relic of the Roman occupation of Britain; it meant as much land as an ox could plough in a year and worked out at between 10 and 18 acres according to the system of tillage) Sir Robert was committed to "winding a Horn, and Chasing or Frighting the Wolves in the Forest

Drawings by Ed McNally

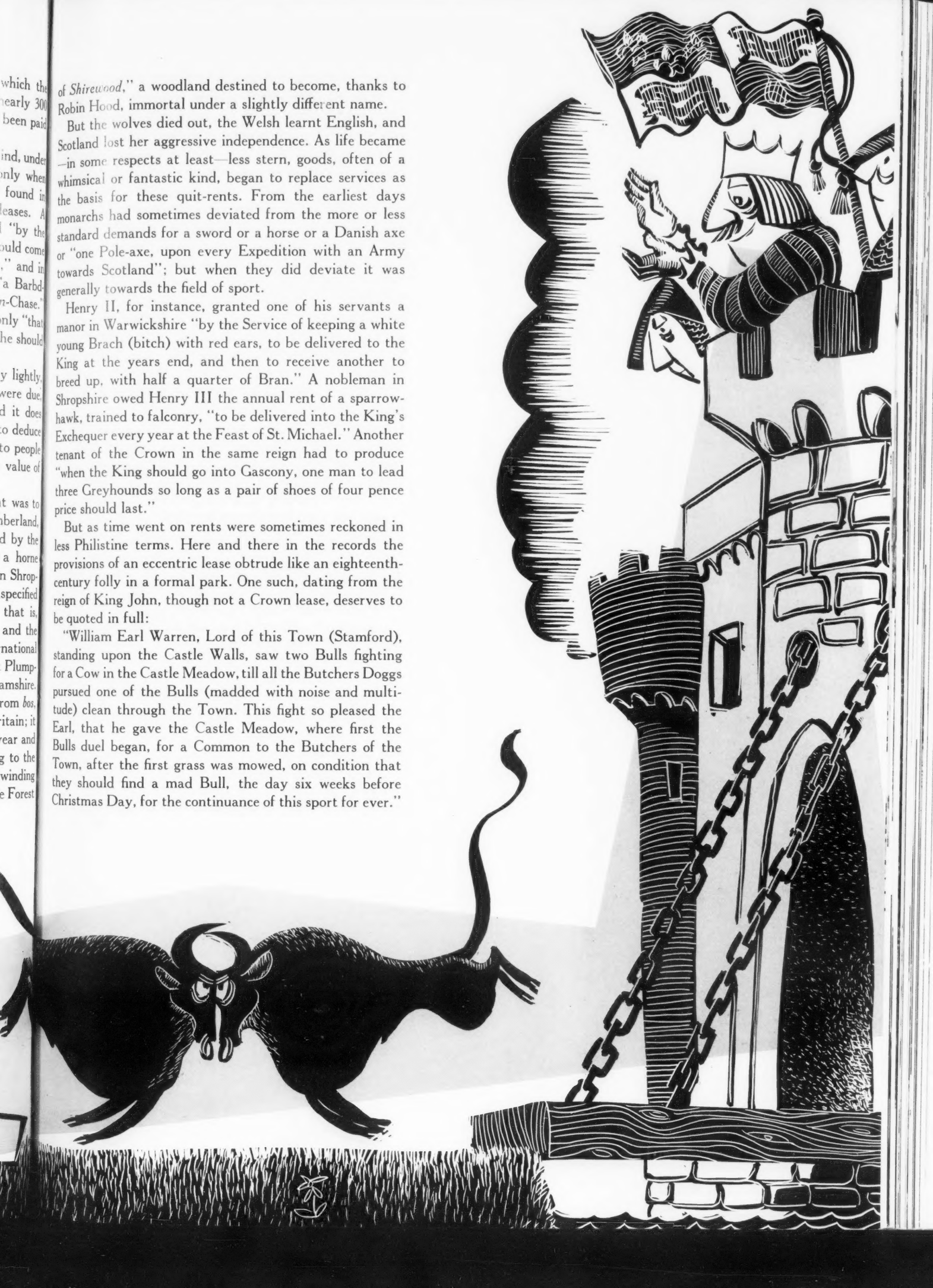
of *Shirewood*," a woodland destined to become, thanks to Robin Hood, immortal under a slightly different name.

But the wolves died out, the Welsh learnt English, and Scotland lost her aggressive independence. As life became —in some respects at least—less stern, goods, often of a whimsical or fantastic kind, began to replace services as the basis for these quit-rents. From the earliest days monarchs had sometimes deviated from the more or less standard demands for a sword or a horse or a Danish axe or "one Pole-axe, upon every Expedition with an Army towards Scotland"; but when they did deviate it was generally towards the field of sport.

Henry II, for instance, granted one of his servants a manor in Warwickshire "by the Service of keeping a white young Brach (bitch) with red ears, to be delivered to the King at the years end, and then to receive another to breed up, with half a quarter of Bran." A nobleman in Shropshire owed Henry III the annual rent of a sparrow-hawk, trained to falconry, "to be delivered into the King's Exchequer every year at the Feast of St. Michael." Another tenant of the Crown in the same reign had to produce "when the King should go into Gascony, one man to lead three Greyhounds so long as a pair of shoes of four pence price should last."

But as time went on rents were sometimes reckoned in less Philistine terms. Here and there in the records the provisions of an eccentric lease obtrude like an eighteenth-century folly in a formal park. One such, dating from the reign of King John, though not a Crown lease, deserves to be quoted in full:

"William Earl Warren, Lord of this Town (Stamford), standing upon the Castle Walls, saw two Bulls fighting for a Cow in the Castle Meadow, till all the Butchers Doggs pursued one of the Bulls (madded with noise and multitude) clean through the Town. This fight so pleased the Earl, that he gave the Castle Meadow, where first the Bulls duel began, for a Common to the Butchers of the Town, after the first grass was mowed, on condition that they should find a mad Bull, the day six weeks before Christmas Day, for the continuance of this sport for ever."



How long this memorial to the Earl's generosity (and peculiar sense of humour) endured history does not relate.

Rather closer to the ideals of gracious living, but less well documented, is the rent of a red rose at Christmas and a snowball at midsummer exacted by the Crown from a Yorkshire estate. This is quoted by many authorities, and it is safe to assume that a lease on these terms was at one time in existence. In *Curious Survivals: Habits and Customs of the Past that still Live in the Present* (London, 1923), Dr. George C. Williamson claims that "the owner of the land has no particular difficulty [in paying the rent], because he grows the roses under glass, and declares that the snow never disappears until August from certain well-protected hollows just above his house, and in consequence he can always get sufficient to make a ball, the size of which the deeds do not mention. It is stated in the immediate neighbourhood that sometimes the snowball has not exceeded the size of a pea."

But neither in this source nor in any other that I know of is the Yorkshire estate or its owner identified, or the terms of the lease quoted verbatim; and it seems probable that this tenancy (unlike the Hudson's Bay Company's) has been allowed to lapse or has been commuted.

This has inevitably happened to most of them. In Great Britain, or anyhow in England, the tradition of "peppercorn rents" survives in a fuzz of affectionate and characteristically inaccurate legend. These rents are assumed to have been nominal, if not derisory: like the damages of one farthing (a quarter of a penny) sometimes awarded in the British Courts to unreasonable plaintiffs whose toe-hold in their legal rights cannot be overlooked.

But pepper, like all other imports, was often scarce in England. The landlord who, in troubled times, demanded his rent in pepper was probably on a par with the Canadian staff officer stationed in England during the Second World War who said: "OK. You can use my flat on your next leave. It'll cost you a bottle of whisky a week." At the time they were entered into, such arrangements were realistic and fair. The landlord asked for his immediate needs to be satisfied; the tenant drew on his resource rather than on his revenue to satisfy them. The reason why so few tenancy agreements based on the peppercorn rent principle have withstood the wear and tear of time is that they reflect a whim rather than a policy. They are personal and ephemeral; the land is neither. Even if pepper remains a scarce and prized commodity for several successive generations, there is no reason to assume that a son will share his father's taste for it. It is not surprising that history, and economics, and human nature have erased from the system of land tenure in the Old World most of the pleasing aberrations which once, like gargoyles on a cathedral, adorned and diversified the main structure.

But not all. In the Guardroom at Windsor Castle two French flags hang over the busts of the Duke of Marlborough and the Duke of Wellington. Each of these great captains was rewarded by his Sovereign with an estate, and the descendants of each still pay quit-rent by annually replacing the flags. One is a fleur-de-lys standard, a replica of one captured at Blenheim; on August 2nd, the anniversary of that battle, the Duke of Marlborough brings a new standard to Windsor. The other flag, a tricolor, must be replaced before noon on Waterloo Day (June 18th) by the Duke of Wellington.

It is difficult to believe that Blenheim Palace or Strathfieldsaye would be forfeit to the Crown if either family failed in its annual duty; but it is equally improbable that either family would in any circumstances allow the continuity of this pleasing and honourable tradition to be

broken. Whether or not the Wellington quit-rent owes its origin to the Marlborough precedent (which is likely), it seems to be the last of its kind.

The oldest obligations of Grand Serjeanty are probably those borne by the hereditary Seigneurs of the Channel Islands, which belonged to the Duke of Normandy before he conquered England. These customs are believed to date back to the eleventh century, and for all anybody knows may be even more ancient. The Seigneur of Rozel must ride his horse into the sea until the water reaches the girths to greet his Sovereign and must act as his butler during his stay. The Seigneur de Saumarez must act as his cup-bearer. When George V visited the Channel Islands it is related that the then head of the de Saumarez family, at a function where there were no goblets of wine in circulation, insisted on taking personal charge of the King's tea-cup.

In the austere and dusty labyrinth of the English law the traces left by Serjeanty have an attractively madcap quality. They are like something out of a fairy-tale—except that in most fairy-tales the goods or services required of the tenant would have involved him in dangerous quests and all-but-impossible feats. These old quit-rents seem, rather surprisingly, never to have been imposed in a spirit of malice or even mischief. The dim memories of them which will be awakend by the loyal ceremony performed by the Hudson's Bay Company in Canada will give pleasure to all who take pride in picturesque customs and the continuity of old traditions. Perhaps (who knows?) the occasion may lead to some small revival in a form of tenancy which seems to give invariable satisfaction to the principal parties concerned and for whose almost total obsolescence there are, when you come to think of it, no very obvious reasons. ◆

FRIEND IN NEED

BY JOHN FELTON

John Felton met fur traders and was given access to H B C files in the preparation of this article.

BEING the manager of a northern fur trade post a few years ago was not all a matter of buying and selling and showing a profit at the end of a year. The traders were self-reliant, resourceful men, out of touch with the rest of the world for twelve months at a time, for it was not till the mid-thirties that two-way radio communication was becoming established in the Eastern Arctic. Talking to them and looking through stilted reports, one is struck with the selfless service given to the welfare of the Eskimo and the Indian by men who took it all as part of their everyday life. There were no heroics and little glory. These were men who would be embarrassed to have their praises sung, but their deeds speak for themselves.

There was the time at Wakeham Bay in the summer of 1927 when the S.S. *Nascopie* seemed to be getting an exceptionally good send-off. Annual shiptime was always a celebration and on her departure the old cannon at the post had been fired in the customary farewell salute. Then the noise and waving seemed more violent than usual, but after all it would be a year before they saw her again.

The waving *was* more violent than usual, for they were trying to call the ship back and their hearts sank as she sailed on. With the last salute the old cannon had exploded and a piece of metal had ricocheted into the face of an Eskimo boy. As the blood streamed over him, those on shore made frantic signals to the vanishing ship. It was no good. It was up to the post manager, Bill Watt and his newly arrived wife to do whatever had to be done.

The 12-year-old boy's face was deeply gashed from side to side across the bridge of the nose. Bill Watt pushed the eyeballs back into their sockets, poured iodine over the wound and stitched it up, with sterilized rubber bands between the stitches for drainage. Then he helped put the boy to bed in his parents' nearby tent. For four days Elijah Goomuik was unconsious. Three or four times a day Bill visited him and treated the wound. And then he revived, and uttered the only English words he was ever heard to say at Wakeham Bay: "White man go to hell." But there was no resentment among the Eskimos. His parents wanted Elijah alive, they did not care whether he was blind or not. He was not blind. Very slowly he recovered. For two years he had to be careful and make sure he did not get his face frozen, and today Elijah is working for the Hudson's Bay Company at Sugluk. That winter was a good fox season, and foxes were valuable then. After his first trapping trip, Elijah's father picked out his two best skins as a personal present for Mrs. Watt.

Good medicine chests and surgical implements supplied by the Company—and the character of the men they employed—took care of all emergencies and anyone who needed treatment received it. Now nursing stations in all

Bob Stewart

the bigger settlements, doctors available for radio consultation, and aeroplane mercy flights have lifted the burden from traders, who shouldered it willingly but often with misgivings.

Sometimes it was epidemics that had to be dealt with, such as the outbreak of flu at an arctic post in 1928 when thirty people died. The ship of the Hudson Straits Expedition was in for two days, a soup kitchen was organized and Dr. Clothier gave instructions as to diet and care to the staff of the H B C and Revillon posts who acted as orderlies. Blankets (20 pairs) were provided by the Company and the sick—up to 25 at one time—were cared for in tents made by those well enough to do the work. The traders made up regular shifts and tended the sick day and night for two weeks.

One man looking after 125 patients has his hands full. This happened to P. J. Soper in September 1941 when the Indians around Fort McKenzie (north of the present Schefferville, Quebec) were smitten with an epidemic he hazarded might be "septic throat, stomach 'flu, heavy colds or a conglomeration of all three." He had just come up by canoe from Fort Chimo with supplies and his crews were so weak and ill on arrival that it was all they could do to land the freight on the beach, where it had to be left. They were, he said, "the sorriest and most dejected looking bunch of people that I have ever laid eyes upon." His own crew were ordered to bed as soon as they reached the post and as others arrived they set up camps or found room in someone else's. Then Jim Soper "mixed up a saucepan of mustard plaster, and armed with that plus aspirin, quinine, chlorodyne, dover powder, thermometer, etc., etc., I started to make the rounds of all camps." In the first round he found fourteen seriously ill and after the visit the worries and doubts set in. "What if half of them should die," thought Soper, "Did I do the right thing for so and so . . ." and so on. "However made up my mind to carry on and do as I thought best. Made the rounds again that evening, still putting on the odd plaster and doing what I could for all."

So it dragged on until at last the majority were able to leave for their hunting grounds. "I recall picking up a calendar then," wrote Jim Soper, "and was hardly able to believe my eyes—it was but two weeks all told since they had arrived at the post; it had seemed more like two months."

Looking back, Soper could smile at the picture of himself wandering through the village with saucepan of mustard plaster, pockets bulging with medicine, and worried frown; and he could feel pride that only two had died. "It could have been worse," he summed up, "although I certainly didn't think so at the time."

An arctic winter adds its own problems in the care of the sick. Take, for instance, an epidemic that broke out in southern Baffin Island in 1943. First word of illness was brought to the post manager at Cape Dorset, Monty Demment, in late January by two Eskimos. At once he visited the camp they had come from, twenty miles away, to find nine people sick, one woman dying while he was there. The camp was revisited three times in the following five days, to render what aid was possible and gather more details which were transmitted by intermittent radio contacts and eventually reached Dr. McKee at Pangnirtung. The diagnosis was cerebro-spinal meningitis. By this time there were two deaths and thirteen sick in a camp of forty-seven and previous contacts had endangered some 250 Eskimos between Dorset and Amadjuak. Such sulfa drugs as were available were used but the supply was soon exhausted. More were requested, but it was a month before they could be dropped from a plane to the post.

Meantime, with the co-operation of the R.C.M.P. constable, Monty Demment, though disheartened by lack of medicines, continued to visit camps to encourage the Eskimos and to enforce a strict quarantine on people to whom this kind of isolation was incomprehensible.

Probably the most exasperating moment came on March 4th when Demment was informed by radio that Ottawa had ordered daily reports to be submitted. Part of his lengthy reply read: "Re request, have travelled over one thousand sled miles and spent from twelve to sixteen hours a day since January 27th solely endeavouring help sick natives, enforcing strict isolation and making up radio reports. Ottawa must be made to see that it is impossible to give frequent reports as camps are spread over large territory, for example Amadjuak, which is a ten day trip from Dorset." It was April before the epidemic died down, by which time there had been fifty cases and twenty deaths. Using only one dogteam which belonged to Ottochie, an Eskimo who worked for the post in summer, Demment and Ottochie had travelled some 1,600 miles. This was at the height of Ottochie's trapping season but he never complained over his loss and was always ready to go anywhere at any time, complete with well cared for dogs and, somehow, a supply of dog feed. The manager's time also was devoted to this welfare work, and the curtailment of trapping meant little coming in to the store for a season. But that was part of the fur trade business, as was shown many times in the "relief account," for the Hudson's Bay Company had long since taken upon itself responsibility for relief to able-bodied Eskimos, while the government looked after the sick and the maimed.

Another trader addicted to the far north and with considerable skill in medical matters is John Stanners. Many

a sick Eskimo has been carefully nursed back to health in Stanners' own quarters. In the winter of 1943-4 he was at Pond Inlet when two Eskimos arrived to tell him that 22 people had died at their camp. The epidemic had developed two months earlier and the two chief men of the camp were among the first to be stricken. They were the only ones capable of handling the whaleboat and the others were afraid to attempt the crossing to Pond Inlet in the stormy weather. As conditions in the camp got worse the few men still able to move about tried in desperation to launch the boat but were too weak to put it in the water. It was not till they could travel on the ice that they reached the post. The camp had been subsisting on a diet of bad narwhal meat. They did not like it, but they were hungry and there was nothing else. By the time the two men, who had been only mildly ill, reached Pond Inlet the worst toll of the epidemic of entero-colitis had already been taken. It remained for Stanners to put up an outfit of food and clean utensils, which one of the Eskimos took back to the camp. Then two missionaries (Anglican and Roman Catholic) took over work on the spot, seeing that a new camp was built a few miles away, tearing down the old buildings, destroying the narwhal meat, and tending the sick. Teams were sent from the post with supplementary supplies and the matter of payment for food (which included fresh seals), sled trips, blankets, caribou skins and parkas, and coal oil went into the post "epidemic relief account."

Colds, flu, and measles are often fatal to people who have not built up resistance to these 'civilized' diseases. Medicines and nursing are often the life-savers and fur traders did not hesitate to give aid, though it was no case of smoothing a pillow and handing out a pill. Alan Scott, with an epidemic of flu among the Eskimos of Southampton Island begun by a germ from a new arrival wrote about the normally clean homes that "with the sickness knocking whole households off their feet, the shacks are a filthy pigstye, enough to turn an arctic veteran's stomach forby a newcomer. I don't blame the natives either as the poor beggars are too ill to do anything about it." Scott went round giving treatments till he too succumbed.

The traders were ingenious in their treatments. One at Bathurst Inlet who could not diagnose the illness of a little girl, Arnavelik, who was running a high fever, eventually fed her Oxo and rum in milk with an eye-dropper. To add to his troubles her father in despair tried to strangle himself. In spite of constant attention for two weeks, Arnavelik died, to the distress of everyone at the post.

Mental cases were rare but the trader at Cape Smith had a bad moment when during a struggle to subdue an Eskimo who had gone off his head, the tent collapsed on top of them. Wrestling under the smothering canvas, the Eskimo suddenly went limp. From then on he was quite docile in confinement at the post, suspicious only of his food. Afraid of being poisoned, he would touch nothing till the trader had sampled it in front of him, and it was the trader who suffered when frequent doses of extra-strong laxative were necessary for Mukumuk. When the ship called on its annual visit, Mukumuk was taken out to a mental hospital where he later died.

These particular instances could be multiplied many times, in many ways: treatments for the maulings of a polar bear, for blood poisoning, for snow blindness; sewing up wounds, lancing boils, extracting teeth; washing and treating frozen feet, cutting away gangrenous flesh.

At times the problem was not medical aid but plain starvation. The post journal of a remote arctic island carries the record of a solitary trader one midwinter: ". . . Local natives getting rather desperate as their caches have run out and not a seal has been killed. I've helped a little by boiling up pots of pea soup and occasionally rice for them but both on account of scanty fuel and food I can't keep it up much longer." One had a blood poisoned hand, and he "had to put on a couple of red hot poultices." Later in the winter an Eskimo staggered into camp, having had no food for many days, to say his family were all starving. They were brought to the camp, eight of them, in terrible condition. One day two seals were shot but they were demolished at a single sitting, with the result that everyone was sick the following day. "They are not merely hungry, they are without clothing except rags, and their boots and gloves are all worn through, and there is hardly a stitch of clothing or a boot in the store. . . . Gave them all the flannel sheets and various rags from the dwelling house, these being all I could find for them in the way of clothing . . . my grub pile is getting miserably low. . . ."

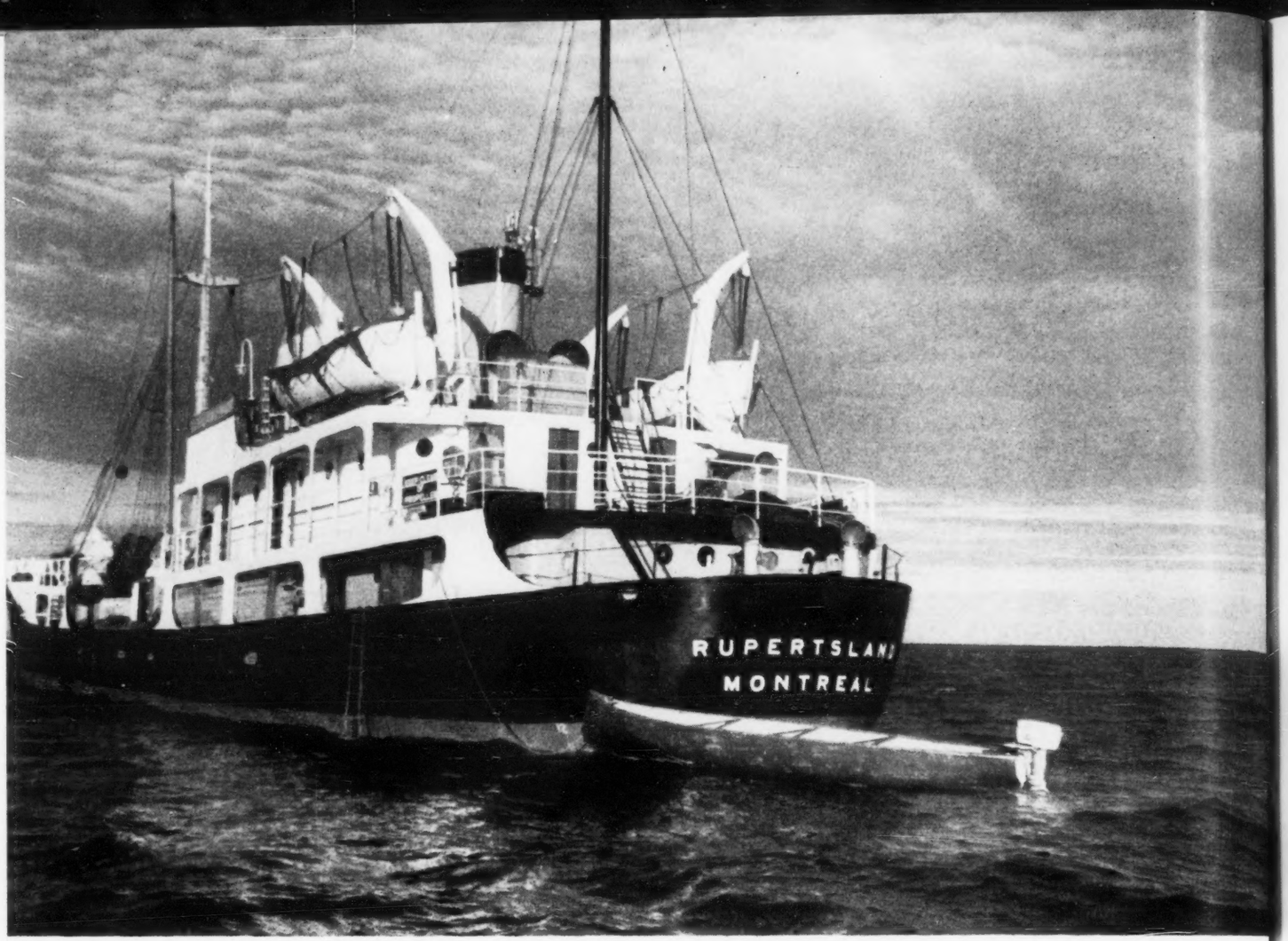
Such were the men of the fur trade. Armed with a "home physician" they settled in the lonely places and did the best they could. Later they were provided with a Post Manager's Medical Guide, covering in simple language everything from "bites, human" to "amputation of a limb." The only training they had was when they came out to headquarters and received a first aid course at their company's expense. They would give the impression of being tough and callous. Tough they certainly were, but there was real human sympathy in them, and their employer, the company often reviled for "exploiting the native," did not quibble over the items entered as "destitute rations" or "epidemic account." They steadfastly faced good times and bad times, and the people with whom they traded were not just customers, they were men and families whom they knew and understood—and helped. ♦

PORTS OF CALL

Charles Gimpel, English photographer, travelled in the ship "Rupertsland" on a voyage to settlements in the Eastern Arctic, viewing the scene with an eye new to the north. These are some of his pictures.

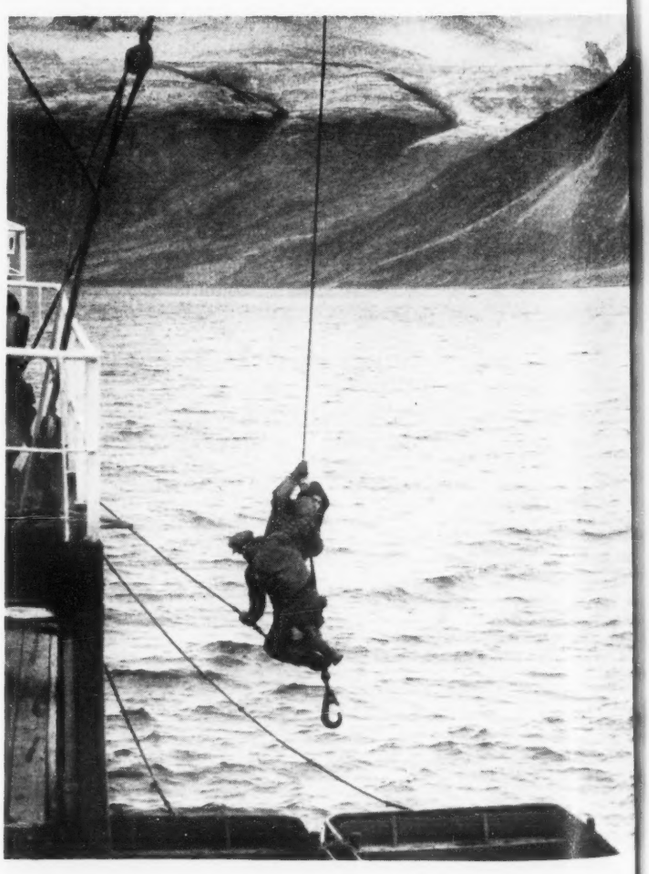
After runs to the Labrador, M.V. *Rupertsland* sets out on her major summer voyage through Hudson Strait to settlements on the Bay, Foxe Basin, and Baffin Island. The cargo loaded in Montreal is dropped off on her outbound trip and she heads for the port of Churchill.

There, where Indian tents cluster near the gigantic grain elevators and the guns of old Prince of Wales's Fort silently command the harbour, she picks up the freight brought in by rail for transport to northerly points. Besides cargo, there are passengers—traders, missionaries, men of the armed services, geologists, research workers, photographers and, if there is room, the person who just likes to travel.



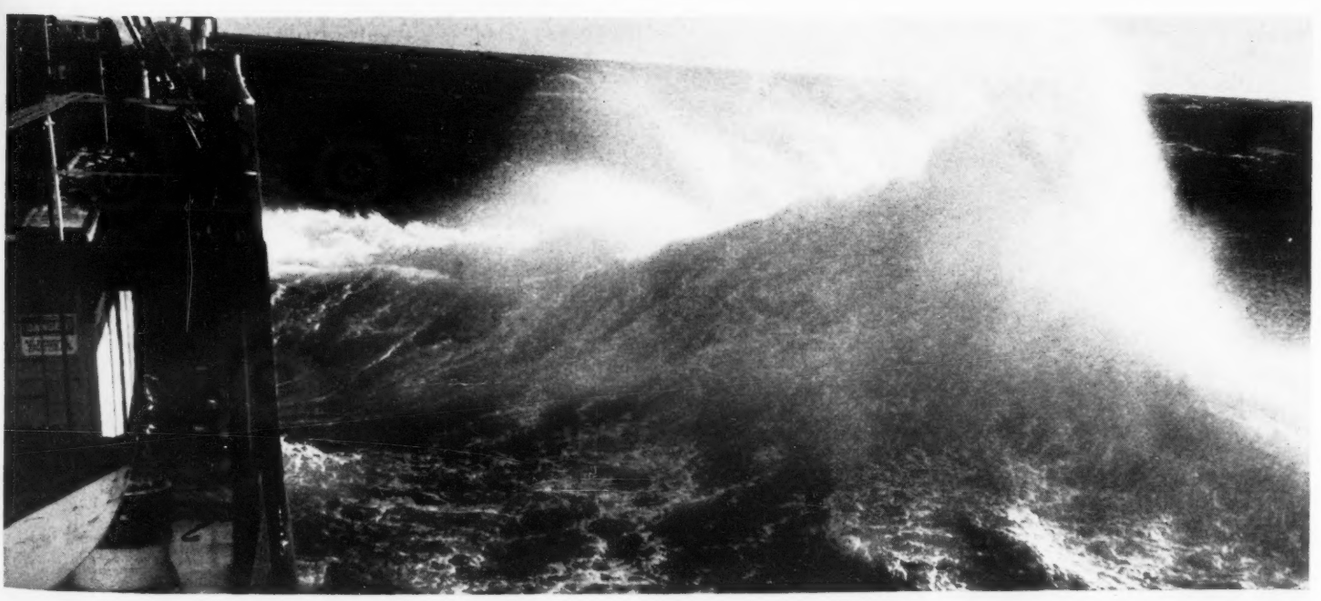
For 290 seasons the Company of Adventurers has been sending Outfits into Hudson Bay. They have been carried in a variety of craft, from the first tiny sailing ships to modern diesel-powered vessels. Probably the most famous was the S.S. *Nascopie* which went to war, travelled to Archangel, sank a submarine, but never neglected her Eastern Arctic posts in thirty-five years of service. Her story ended when she struck a reef outside Cape Dorset harbour in 1947.

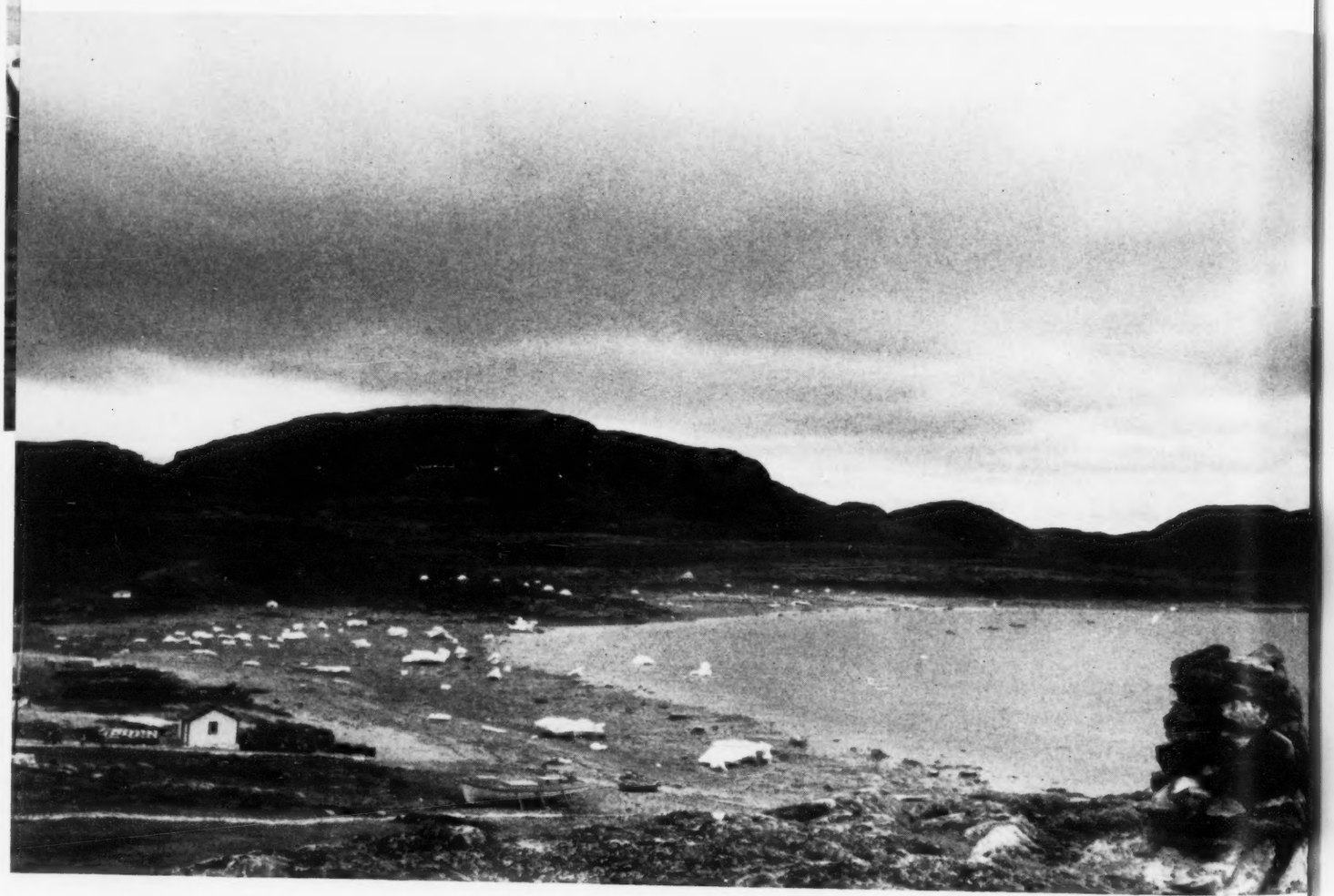
The M.V. *Rupertsland*, built for the Company in Scotland, made her first voyage to the Arctic in 1949. The lives of many people are bound up with the visit of the annual ship for she carries in her holds and on her decks all the amenities of life for the coming year. There is merchandise for the northern stores, fuel for heating, electric plants, radios, perhaps a piano; there are food and clothing and medical supplies for the traders and missionaries and government people. There may be a truck or a motorboat or a stove, even a prefabricated house, windows and furniture and cans of paint; parcels and mail, to rejoice or make sad, though mail is not so vital as in the days before aeroplanes and radio.



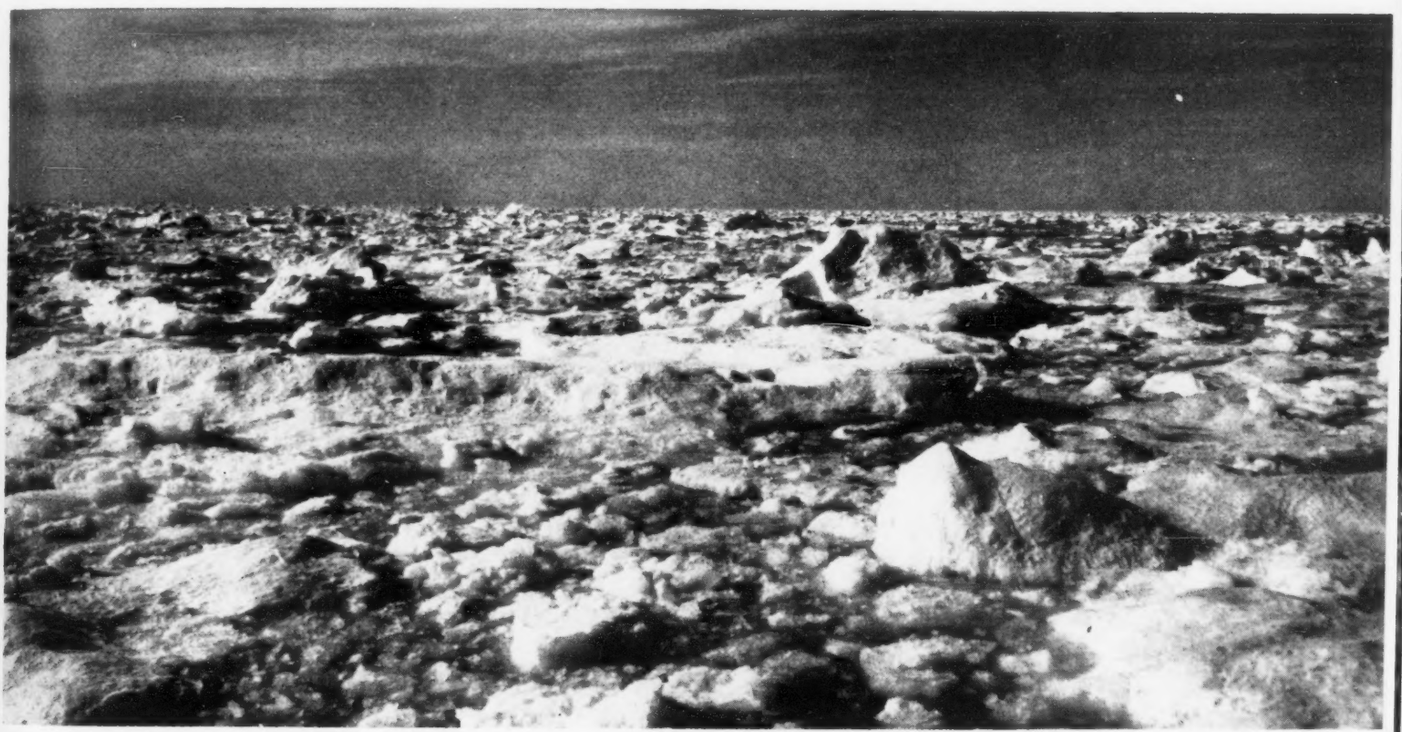
The Arctic is not equipped with wharves so freight is unloaded into the two motor barges carried by the ship, helped by whatever craft can be mustered locally. Each barge carries $4\frac{1}{2}$ tons, but there may be 100 tons to go ashore.

Sugluk on Hudson Strait offers calm seas to the *Rupertsland*, which will make for a quick call. Fog, snow, storm, and pack ice all too often cause delays or may even prevent the ship reaching a planned port of call.

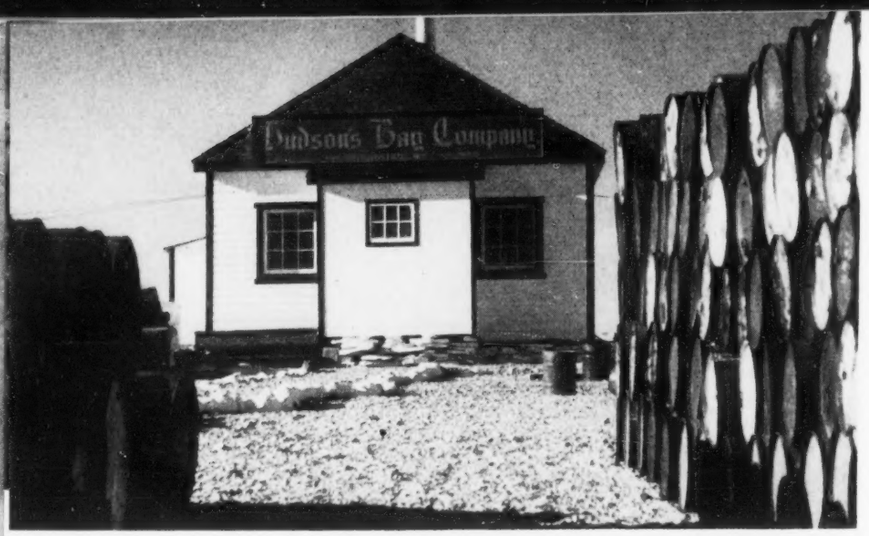




Everyone, Eskimo and white, sets to work to carry supplies from the beach, where they have been landed, to the warehouse, as they are doing here at Cape Dorset on Baffin Island. The cairn on the hill above the settlement was built by the survivors of the *Nascopie* while waiting for relief transport.



Sparkling seas or grinding ice floes are all in the day's work for the *Rupertsland*, for the welded-steel, radar-equipped, 660-ton ship was designed for business in arctic waters.

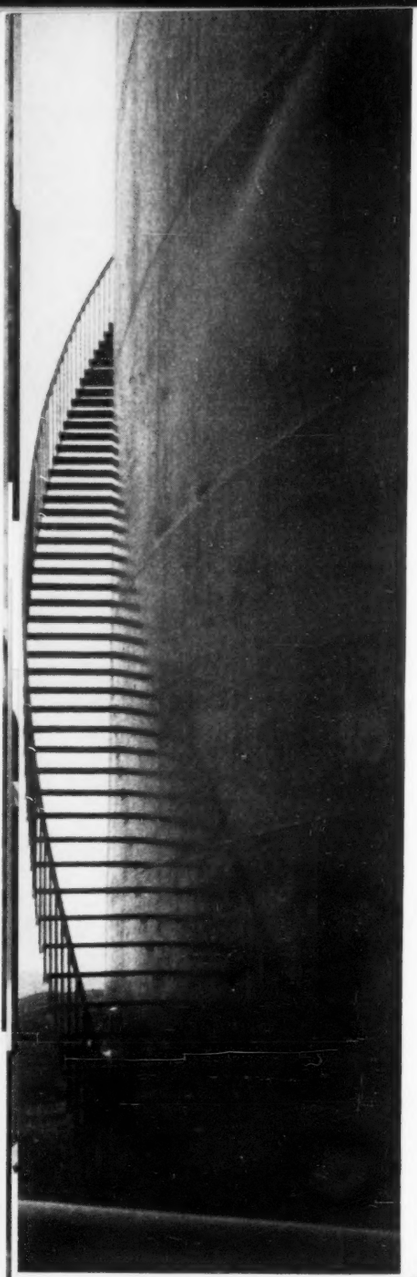


The path of the white man in the Arctic is marked by a trail of oil drums. Fuel to keep him warm, fuel to cook his food, fuel to operate his machinery. No longer is oil from whale and seal and caribou adequate to the dweller in the treeless land. This fuel must be imported, and about one-fifth of the *Rupertsland's* cargo is usually oil. Here are drums piled up by the building at Igloolik. Empty drums make water butts, cooking stoves, incinerators, playthings for children.

Igloolik at the top of Foxe Basin, where these pictures were taken, is the northernmost port of call for the *Rupertsland*. The varied buildings show northern store, Eskimo summer tent, and Eskimo wooden house. Adaptation is evident in the tent in sewing machine, radio, clock, and baby's bottle. Old-time houses in this settlement long known for its walrus hunting were made of bone, skin covered or chinked with earth and moss.

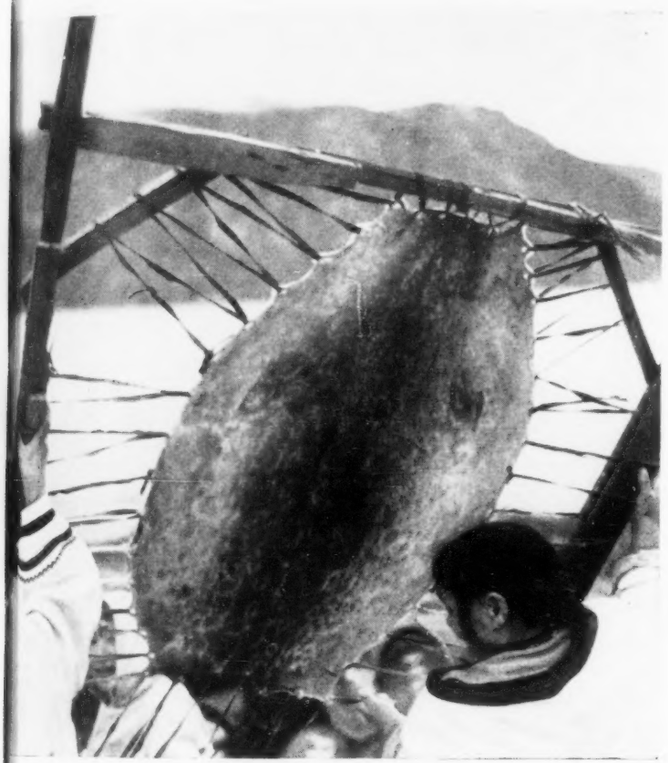
Parry's second expedition in the *Fury* and *Hecla* wintered at Igloolik in 1822-3 and became well acquainted with the Eskimos in the region, whom they found very hospitable. Captain Lyon, who lived and travelled with them has left an excellent account of their lives in his Journal.

The landlocked harbour of Lake Harbour set in the hilly, rocky southern coast of Baffin Island has the appearance of a placid pond, which is belied by its extremely high tides. An Eskimo pilot boards the ship in the Strait to take it through the long tortuous inlet. Used as a whaling station last century, the first permanent establishment at Lake Harbour was the Anglican Mission in 1909, followed two years later by an H B C trading post.



Frobisher Bay is so modern that it has oil tanks and a shanty town, an American Air Force base, and quite a large number of Canadian civil servants from various government departments. It has an intercontinental airport, and a rehabilitation centre for Eskimos, to say nothing of schools, movies, and banks. It is by far the largest settlement in the Eastern Arctic and its complex life is very different from that of the small Eskimo villages where few live permanently and the white nucleus often consists of store, mission, and police detachment. At Frobisher there is air mail service three times a week, but the ship has an extra load for here there are two stores to supply.

The Eskimos of Frobisher Bay have been in contact with the white man longer than most for in 1576 they exchanged seal and bear skins for bells and looking glasses and toys with members of Martin Frobisher's expedition. After his three voyages they were not disturbed again till the nineteenth century when whalers worked the bay and Charles Francis Hall explored and charted it. It was 1914 before the Hudson's Bay Company established a post there.



On the east coast of Baffin Island the mountains, cut by fiords and flanked by glaciers flowing from the ice-cap, come close to the sea.

Dramatically situated three miles up a fiord on the north shore of Cumberland Sound, on a gravel terrace beneath towering cliffs, is Pangnirtung. This little settlement, with its Anglican mission and hospital, store, and R.C.M.P. post, is the centre of activity for several hundred Eskimos in the surrounding area. Forced by the mountainous country to live by the shore, sealing and whaling are the main occupations of the Eskimos, these mammals providing skins, meat, and fat, for clothing and shelter, food, heat and light, and hides and oil for export. In the summer tents of sealskin and canvas with wooden doors are set up on the rocky shore. In winter the same doors will be built into snow-houses.

The time has come for the ship to clear the arctic seas before freeze-up locks her in, and once more she heads south, holds light, with a cargo of oil drums, peltries and carvings, letters, whale hides, and white whale oil.

The prospecting party camping on Sloan River near Great Bear Lake in 1930. Left to right: Punch Dickens, Gilbert LaBine, Charles LaBine, Leo Seaberg.
G. A. LaBine

GILBERT LA

MOST of the pioneering sourdoughs who roamed the rolling rock desert of the Precambrian Shield, staking the claims that launched Canadian mining as a major industry, have already become faceless, almost legendary characters of a half-forgotten era. A spectacular exception is Gilbert LaBine, the adventurous bushwhacker who pushed Canada into the atomic age a quarter century ago, and who today is still numbered among the three or four most influential mining men on Toronto's Bay Street.

His current fortune is concentrated in Gunnar Mines—Canada's first dividend-paying uranium producer—which is exploiting a mammoth, sausage-shaped ore deposit near Lake Athabasca, in northern Saskatchewan. But LaBine's most significant mineral strike was made on the unseasonably cold morning of May 16, 1930, at a forlorn inlet off Great Bear Lake less than a day's walk from the Arctic Circle, when he chopped a plum-size blob out of a virgin crag sloping into the bay's still-frozen water. It was the first commercial showing in Canada of pitchblende—the mother ore of radium and uranium. The find eventually tripled the world's radium supply, shattering the Belgian monopoly over its curative rays.

Ultimately, it was this deposit's uranium that provided the wrath for the bomb which ended World War II. "If it had not been for the vision and determination of Gilbert LaBine, we wouldn't have had the bomb in time," Dr. William L. Laurence, the science editor of the *New York Times*, who witnessed the carnage of Nagasaki has written.

LaBine's discovery was not an accident. It represented a natural climax for which he had been rehearsing during half a lifetime spent tramping through the geologically unknown northern belts of Ontario, Quebec, Manitoba and stretches of the Subarctic, traversed previously only by this country's original explorers and fur trappers.

With the bristling Irish pride inherited from his mother, LaBine insists that he regards his independence from bosses as the main accomplishment of his life. The only employer he ever worked for was the old University Mine, where he held a brief job as a miner during the Cobalt rush, which lured him away from his father's farm at Westmeath, Ont., when he was sixteen. A year later, in 1907, LaBine quit to become a prospector and almost immediately staked some silver-bearing claims east of Cobalt, which he sold for five thousand dollars.

That winter LaBine attended a short course at the Haileybury School of Mines with Dr. W. G. Miller, the provincial geologist. Most of Miller's class was anxious only to learn the shortcuts of gold and silver prospecting, but LaBine was intrigued with Miller's theory that there might be radium-bearing pitchblende in the Cobalt area. Marie Curie had just been awarded her second Nobel prize

Great Bear Lake, looking north across LaBine Point. Eldorado Mine is visible just right of centre.
R.C.A.F.

for isolating metallic radium. She had used ore from Joachimsthal near Carlsbad, in Czechoslovakia which occurred in associations remarkably like the Cobalt formations. Miller showed LaBine samples of pitchblende and taught him its identification through the ore's remarkably heavy specific gravity.

LaBine then began to range northward, scouring the bush for mineral showings worth a mine. His diet was the yield of his fishing rod and a 30/30 Winchester, supplemented by the crude bread he baked over campfires. "The bush," he says, leaning heavily into the red-leather upholstery of his executive chair, "is good to any God-fearing man with a rifle and a pinch of salt."

During a prospecting trip along the Eastmain River, east of James Bay, in 1912, LaBine found one of this country's rare diamond deposits. But the quality of the stones did not warrant mining. To collect his samples, he lugged a supply-heavy canoe over muskeg so spongy that he had to strap on snowshoes to keep from sinking out of sight.

He was resting between prospecting trips in Toronto during the fall of 1916, when he overheard two prospectors talking about a radioactive hill near Perth, Ontario. He jumped into a taxi and drove two hundred miles to investigate the rumour. It was a false lead. A year later, he found some lightly radioactive rocks in northern Ontario.

Despite his pitchblende fever, LaBine concentrated on the search for more common minerals. His biggest strike was during a 1917 trip into the Rice Lake area of southeastern Manitoba. After weeks of rock chipping with indifferent results, he woke up at four a.m. one day, washed his face in a nearby creek, and on his way back through the mist-shrouded forest, found free gold in twenty-five places. He ran into camp, shouting to his partner, "My God, this is an Eldorado!"

A company called Eldorado Gold Mines Limited was organized with LaBine as managing director. Half a million dollars raised through stock sales was used in 1927 for six thousand feet of underground exploration. The encouraging surface showings turned out to be thin veins which pinched out at 525 feet. Rather than drain the funds remaining in the treasury on further drilling, LaBine resolved to find his company another mine.

It was a time of intense gold prospecting activity. Dozens of rushes confirmed the dimensions of wealth under the scented syrupy muskeg of northern Ontario and Quebec. The frenzied manoeuvers of the stock speculators drove prospectors deeper into the Subarctic.

Rumours of copper and gold showings interested LaBine in the slab of wilderness between the Coppermine River and Great Bear Lake—a vast no-man's land dividing the territory of the Eskimos and the hunting ground of their

R. LaBINE—adventurous bushwhacker

BY PETER C. NEWMAN

The author is a Maclean's editor whose book "The Flame of Power," from which this article has been excerpted, is being published by Longmans, Green in the autumn.

enemies, the Indians. The region had remained inviolate, because a thousand-mile lacework of rock-and-lake-strewn swamp separate it from Edmonton, the nearest city. For more than a century explorers had returned with tales of mineral riches. Samuel Hearne, the Hudson's Bay trader who set out in 1770 to find the copper mines legendary with the Chipewyan Indians, reported the use of copper tools, but found only scatterings of the mineral.

LaBine had learned of a 1922 expedition into the area by Charles Sloan, a trapper who had brought out chunks of copper—at that time not considered worth mining so far from transportation facilities. But by 1929 copper had risen to twenty-four cents a pound. LaBine decided to visit the showings, but he found nothing of interest.

While he was being flown out of Hunter Bay by C. H. "Punch "Dickens he noticed some cobalt bloom smudges in deep, transparent water, which suggested a locality to lure the prospector."

After arranging for his brother, Charles, to lead a supply party up the Mackenzie River in the summer, LaBine flew from Fort McMurray, Alta., to the headwaters of the Camsell River, on 1 April, 1930. He intended to explore the unknown region between his landing spot and Echo Bay. With him was the late Charles E. St. Paul who had

Eldorado Gold Mines Limited

The main street of Eldorado on Echo Bay, Great Bear Lake, in the late thirties. In the background are the power house and mill.

along the shore line, about thirty miles south of the bay he had explored. During the winter of 1929 he searched government files in Ottawa for some confirmation of his sighting. He found a report by Dr. J. Mackintosh Bell who had toured Great Bear Lake for the Geological Survey of Canada in 1900. Bell noticed the cobalt bloom, which LaBine saw from the air at an inlet he named Echo Bay. "The colors," Bell reported, "gave scintillating reflections

staked properties adjacent to Howey Mines and was an occasional prospecting companion of LaBine's since 1913.

To haul their sixteen hundred pounds of supplies—including a sectional canoe—the two men made a crude sleigh, boosting their gradually weakening pulling power by hoisting sail. For six weeks they marched thirty miles a day through forty-below winds, sampling rocks along the way, seeing only the occasional caribou, hearing

nothing but the lonely chatter of the arctic pine squirrel. The slippery lake ice would not support their boots. To gain traction, they tied hacksaw blades to their frozen soles. Unaccustomed to the dazzling spring sun on the burnished ice, St. Paul became snowblind but he could still help pull the sleigh.

In the evening of May 14, they staggered into Echo Bay. LaBine set up camp and began to poultice his partner's pain filled eyes and burnt face with tea leaves dipped in melted snow.

At ten o'clock on the morning of May 16, LaBine left St. Paul for the first time, for a scouting trip across the frozen bay. In less than an hour, he found a treeless promontory near a rocky jut of shoreline, shining with splashes of cobalt bloom. "As I looked over to the shore," LaBine recalls, "a distance of about three hundred feet, I noticed a great wall. It had a strike of dark, greenish-black lava-like substance zigzagging through it. Near the water, it widened into a three-inch vein. Following it along, I found a piece of ore probably the size of a plum. I chipped it off with my hammer. It was solid pitchblende. I knew it, because I felt its specific gravity. You couldn't mistake it."

Within the next three hours LaBine discovered sulphide ore so copper-rich he carved his initials in it with a prospecting pick. He also traced ten-foot-wide layers of silver ore, winding across the rock like a highway. He immediately staked two claims to cover the mineralized section, now known as LaBine Point. LaBine was so excited about the pitchblende that he forgot to tell St. Paul about the accompanying silver. They stayed at Echo Bay until St. Paul could travel again, then set off for Hunter Bay, thirty miles north to meet their supply party.

That season LaBine's crew staked the shore around the original find, bagged a few samples and on September 9, flew out to Fort McMurray. During the winter, news of the radium find so stirred the depression-dampened spirits of treasure seekers all over the world, that in the spring of 1931 almost every available bush plane in Canada was hired for a shuttle service into Great Bear Lake.

As soon as the ice broke up in the summer of 1932, LaBine shipped out twenty tons of semi-refined ore to metallurgical labs in Ottawa. Dr. G. S. Whitby, director of the National Research Council's Chemistry Division, reported that Echo Bay ore was a "chemical museum," containing not only pitchblende in larger quantities than any rock then known in the world, but fifty-three other minerals as well, including silver, copper, lead, zinc, cobalt, iron and large amounts of uranium.

To gain initial capital for his mine, LaBine resolutely concentrated on blasting out the surface silver—some of it running to a fantastic twenty thousand ounces per ton. Six hundred bags of unrefined silver, worth a million dollars, were stacked in the back seats of flimsy bush planes and flown out to Fort Rae. Then river steamers chugged the ore upstream to the railhead at Waterways.

A year-round camp of tar shacks soon clustered near the Echo Bay workings of Eldorado. Seven miles away the settlement of Port Radium mushroomed. Twenty-five hardrock miners were meanwhile sinking a shaft through the permafrost. Every pound of food and equipment had to be flown in by the brittle bush planes, buzzing northward like bees swarming to a hive on a glacier. At $1.50 a pound for airfreight, a bottle of Port Radium whiskey cost $11.50.

Despite its proven value, Canadian investors remained skeptical about the possibility of bringing out Eldorado's ore economically. Great Bear Lake's navigation season lasts only two months and its only link with the Mackenzie system is the shallow Great Bear River, broken by an eight-mile jag of cataracts. The fifteen-hundred-mile trip up the Mackenzie is obstructed by impassable rapids between Fort Smith and Fort Fitzgerald. At first, LaBine loaded his ore on Hudson's Bay Company boats at Fort Norman. But after a freight-rate fight, he built his own ships.

By 1933 LaBine had raised enough development money from Canadian investors to build a radium refinery at Port Hope, Ontario, sixty miles east of Toronto, near some cheap sources of the acid necessary for the process. Milling could not be done at the mine, because seven tons of chemicals were required to treat a ton of pitchblende. It took from late in 1933 to 16 November 1937 to produce the first ounce of radium—a pinch of white powder about the size of a kitchen match.

Uranium, one of the refinery's byproducts was causing LaBine serious difficulties. To encourage research into its useful applications, he sent samples to hundreds of British and American scientists, but the outbreak of war disrupted business. In June 1940 he ordered the pump compressors stopped, and his mine closed. The now unrestrained water of Great Bear seeped back into the workings.

Although Eldorado's financial statements showed a comfortable assets-to-liabilities ratio, the banks refused to accept the piles of ore at Port Hope as loan collateral. To keep his company alive, LaBine pledged personal securities worth a million dollars. With his income and his occupation cut off by war, LaBine paced his office, worrying about his future. Then, just after lunch on 21 April 1942, LaBine got an urgent call from C. D. Howe, the Minister of Munitions and Supply, to come to Ottawa that night. Howe ordered LaBine to reopen his mine at crash speed. Uranium had suddenly become war's most

vital raw material. The miners hired to reopen Eldorado were screened by the R.C.M.P. and sworn to secrecy.

What made the uranium suddenly so precious was that Allied scientists had discovered that there was no need to spend a thousand years isolating an ounce of U235 with which to split the atom, as had been previously supposed. The large plutonium (U238) content of uranium was just as useful in releasing energy.

Uranium's importance was further underlined when in January 1944, Howe, acting under wartime emergency

A small plane landing on Echo Bay in front of LaBine Point, with its mine buildings, dining camp and bunk house, including the first centrally heated modern building put up in 1934-5.

powers, tabled an order-in-council in Ottawa, expropriating Eldorado's outstanding stock for $1.35 a share and transferring the company's assets to the government.

LaBine himself remains philosophical about the expropriation. "I haven't any regrets," he says. "Sure it was high-handed burglary. But it was war. After all, what you lose on oranges, you gain on bananas."

The denouement came with dramatic finality on 6 August 1945, when the atomic bomb burst over Hiroshima. The horror weapon's uranium, it was revealed, had come chiefly from Eldorado.

The government demonstrated its continuing faith in LaBine not only by keeping him in the Eldorado presidency, but by awarding him an Order of British Empire for his war work, and naming him a director of the Polymer Corporation, a crown company making synthetic rubber.

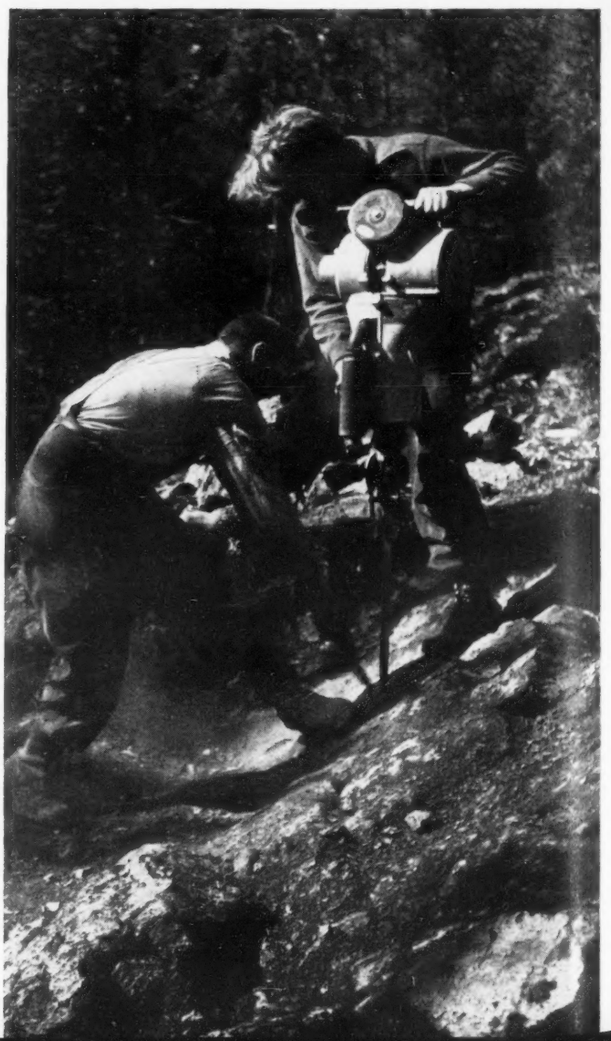
Since Ottawa's expropriation, Eldorado under LaBine's guidance had been actively searching for other Canadian uranium deposits. LaBine sent twenty prospecting teams into the bush during the summer of 1944 with portable Geiger counters.

During the next two years nearly two hundred radioactive sites were checked—many through extensive diamond drilling—but no new ore bodies were located until 1946. Einar Nelson and Phil St. Louis, two Eldorado prospectors, landed on Ace Lake near Lake Athabasca, in northern Saskatchewan, where a small pitchblende showing had been reported in 1932 by Inspector Nicholson, then of the R.C.M.P. When drilling had confirmed the excited clicking of St. Louis' Geiger counter, a ridge between Ace Lake and Beaverlodge Lake was found to contain enough uranium to triple Canada's reserves. The government-owned company spent twenty million dollars establishing a second producer at Ace Lake in 1953. One of the Ace Mine drill holes intersected uranium ore worth $417 a ton—the richest ever discovered.

After Ottawa relaxed its monopoly on uranium prospecting, in 1947, LaBine resigned as the Eldorado president to continue the prospecting he had interrupted seventeen years before.

He formed Nesbitt LaBine Uranium Mines in 1950, out of properties adjoining the government's Beaverlodge

Alex Zeemel (left) and John Nesbitt running a gas-driven drill at a showing on the Gunnar property. George Hunter



George Hunter

Mill construction at Beaverlodge near Lake Athabasca. In the background is the Ace Mine, first development on the crown-owned Eldorado property.

workings. Two shafts were sunk and nearly a million dollars' worth of uranium was blasted out, but operations were suspended in 1956, because of insufficient mineralization at lower levels.

LaBine had meanwhile been dispatching prospecting parties all around the Nesbitt LaBine property, convinced as he had been decades earlier at Echo Bay, that he was in "elephant country." His hunch paid off spectacularly in August 1952, when Albert Zeemel, a prospector who had been on LaBine's payroll for twelve years, wired him: "Come quick. I've shot an elephant!"

Zeemel had located outcrops near the St. Mary's Channel, twenty miles southwest of Beaverlodge, which made his Geiger counter chatter like a rural telephone line. By January of the next year, 173 diamond drill holes had outlined a deposit 1,400-feet long and 600-feet wide, with rich pay ore, distributed bacon-strip fashion. LaBine called his mine Gunnar, after a dormant gold mine he had floated in 1933.

The mine's uranium concentrating mill went on tap at 11 a.m. on 26 August, 1955, making Gunnar Canada's first private postwar producer. The thirty-six months taken from staking to the first mill run stands as a speed record for a major Canadian mine.

The company's sales contracts guarantee a minimum net profit of eighteen million dollars by 1960. LaBine, as Gunnar's largest stockholder, is one of the Canadian mining industry's richest men. But he still insists on seeing every one of the many grubstake-hungry prospectors who shuffle into his office.

He talks to them for hours, reminiscing about the simpler, more exciting days in the bush. Those who tell a convincing story, leave with money.

Joseph LaBine, his son and a Gunnar vice-president, once tried to save his father's time by weeding out the obvious blue sky dealers. But LaBine angrily stopped him. "You never can tell," he said. "The next fellow might be Saint Joseph." ◆

NORTHERN BOOKS

A JOURNEY TO THE NORTHERN OCEAN

by Samuel Hearne, edited by Richard Glover

Macmillan Company of Canada, Toronto. lxxii + 301 pages. $6.50.

Reviewed by Margaret Stobie

THE dream of shipping copper across the northern seas to England, which grew up in the mid-1700s, vanished when Samuel Hearne arrived at the mouth of the Coppermine River in July 1772 and saw before him the impassable arctic ice-pack that lay not far off-shore. Yet though the dream faded, the record of its pursuit has not, and we can be grateful that we have available once more Samuel Hearne's *A Journey To The Northern Ocean*.

The muted tone of this book is unusual in travel books. Possibly it comes from the fact that, publishing his account twenty-three years after his famous journey, Hearne added to his original records many reflections and recollections about the people, the animals, and the nature of the country he had passed through, and so the pace seems leisurely. Probably also the tone is affected by the fact that the main purpose of the venture ended in disappointment. Whatever the cause, there is little of the excitement that one gets, for instance, from Dr. John Rae's records of his journeys, little sense of achievement or even of physical triumph over an unknown and fierce wilderness.

The hardships are noted, of course—the struggles with cold and hunger and storm and torn feet—but they are not treated in heroic terms. However, Hearne's circumstances amply account for this fact. Whereas Rae set out with a small picked group, Hearne travelled in a large company, in which he was the only white man. For most of the time, he notes, he was surrounded by about two hundred men, women, and children. Occasionally the company grew, with visiting bands, to the size of a small town, so that when they broke camp, the whole countryside seemed to move. What Hearne suffered, he suffered together with many others to whom such hardship was customary. He would not, then, think himself particularly heroic.

However, if the book lacks heroics, it has another quality that is perhaps more remarkable. As the account progresses, a strange feeling grows in the reader that he has come upon another version of *Gulliver's Travels*. The comparison comes to mind, for instance, when Hearne meets the Copper Indians, who examine him "from top to toe, as an European Naturalist would a non-descript animal. They, however, found and pronounced me to be a perfect human being, except in the colour of my hair and eyes." It comes to mind in Hearne's assessing of values: "It must be allowed that they are by far the greatest philosophers, as they never give themselves the trouble to acquire what they can do well enough without." It is present too when Hearne is a helpless and horrified witness of a brutal massacre; and Swift imagined nothing more odious than some of the practices of the medicine men. Hearne himself, with his background as a sailor and his interest in anatomy, is curiously reminiscent of the fictional ship's surgeon, even to his occasional petulance.

But here are neither pigmies nor giants, and the matter is not satire. Rather, the book is a fresh and fascinating study of a primitive people by a man of lively and probing intelligence.

In his informative introduction and in his modest footnotes, Professor Richard Glover proves himself an admirable editor of Hearne's work.

Mrs. Stobie is a freelance writer on western history and broadcaster of reviews and talks on the C.B.C.

ESKIMO

Edmund Carpenter, Frederick Varley, Robert Flaherty

University of Toronto Press. $4.95

Reviewed by George Swinton

EDMUND Carpenter's *ESKIMO* is surely one of the most lovely and delightful books published in Canada for years. And that its greatest delight should also be its most noticeable weakness really does not matter. Let me say why.

Carpenter's style of writing aspires to poetry (rather than to anthropology) and where it succeeds—and it does succeed in by far the greater part of the book—it communicates with deeply felt sentiment and honesty. The language, the form, and also the content of poetry belong to the realms of intuition, invention, and imagination. And so, indeed, does this book. It evokes powerful and even convincing images of the Eskimo, his ways and his art—they are (as they should be) seen and interpreted as a whole. But convincing and powerful as these images are, they are more creative interpretations than substantial evidence and information. And it is precisely here that charm and weakness coincide. For while I heartily subscribe to the joyful flight of personal vision, I also regret the so treacherous absence of objective observation.

This paradox is further emphasized by the illustrations. Varley's creative contributions are unequivocally good and strong. Flaherty's actual pieces of Eskimo art (and due to the charmingly extravagant make-up of the book, creating an Eskimo atmosphere of informal space without sequence, *e.g.*, pages without numbers and illustrations without readily accessible references, I am not always certain whether they are Flaherty's original pieces or Carpenter's of more recent vintage and different locale), in any case, these illustrations of Eskimo art, excepting two or three, are less successful as examples and as photographs. This really *is* a shame, considering all the effort that must have gone into making this such a handsome book. Of course, here I might be a bit more critical than the reader not trained in art, but I cannot see why a book which makes use of art, describes art, and is otherwise produced with such remarkable sensitivity, should fail in this important regard.

Carpenter's description of the Eskimo's "traditional" art—as opposed to the contemporary phase of soapstone carving (which, I feel, he underestimates in quality and significance)—deserves particular mention. His hypothesis is fascinating and extremely well written. But also here the book's paradox continues. For while the descriptions are perceptive and sound convincing, Carpenter in his specialist knowledge of the Eskimo (and not of art in general!) ascribes to the

Eskimo very particular modes of seeing and interpreting, which are quite general to many primitive civilizations of the last twenty-five thousand years and, of course, to most children of our time (and, I assume, of all times). Yet in spite of this, the poetry and the sensibility of his descriptions *are* fascinating and deserve to become a classic in the field of criticism and aesthetics.

All of which brings me to my final point, the point I tried to make at the very beginning: *ESKIMO* is a beautiful book of utmost delight. And yet I am not certain what *ESKIMO* was really intended to convey, though it does convey many things however vague they are. Most of all, it succeeds in creating a poetic image of former Eskimo existence: a continuous presence in which action and experience produce an indefinable and ever-changing essence.

Mr. Swinton, artist and professor at the Manitoba School of Art, has made a special study of Eskimo art.

ARCTIC WILD
By Lois Crisler

Harper, N.Y., Musson, Toronto,
xv + 301 pages. $5.95.

Reviewed by William O. Pruitt, Jr.

THIS book is a very vivid and readable account of the adventures and impressions of two people during an 18-month encounter with Alaska's most valuable economic resource. The Crislers, Herb and Lois, are no mere "Outsiders" but, while pursuing their job of wildlife photography, have photographed more of Alaska than most "sourdoughs" have ever seen. Those of us who remember Disney's "Olympic Elk" will recall that this was Herb Crisler's film. Footage taken by Crisler contributed markedly to the success of the Disney film "White Wilderness." *Arctic Wild* is the intensely personal account of the Crislers' life while travelling and living north of the Brooks Range where Herb photographed caribou, wolverine and wolves and various other critters for "White Wilderness."

With the appearance of this book it is evident that the motion picture footage was only another result of their wilderness stay. Lois and Herb Crisler are revealed as extremely observant students of animal behaviour whose observations delve beneath the visible actions of unfettered yet fraternal animals to probe the ecological and evolutionary implications of the actions. While several well-known northerners appear in the book, the real stars are the wilderness creatures and the great wide land in which they live.

In order to photograph some of these creatures successfully, the Crislers had to capture them, gain their confidence and be accepted by them. Because these two naturalists are of that rare breed, truly civilized humans, they were accepted into the social life of their wolves. The result was that they learnt to know (and photograph) the real, pulsing, sentient animal. Lois's descriptions of wolf behaviour will go far to dispel the old wives' tales of the wolf as a bloodthirsty, ravening beast.

Because the Crislers were accepted into the social life of a highly developed and sensitive wild mammal they enter that exclusive company of humans, including Grizzly Adams, Ernest Thompson Seton and Konrad Lorenz, to whom this privilege has been extended.

This book describes in some detail the hunting techniques of wolves. These observations confirm those made by other naturalists that wolves are highly selective in their prey individuals. It might be better to state that caribou are highly selective in the individuals which are presented for culling from the band. A wolf perceives very quickly whether pursuit of a particular band of caribou will be fruitful or not, and if not, abandons the chase almost immediately. The band that alerts and flees as a compact unit is not chased, but the individual caribou that lags behind or does not stay with the band is immediately a target for pursuit. Highly significant are Lois's examinations of fresh kills. In almost every case the carcass showed some physical defect, pathological condition or heavy parasitic infection. It is now abundantly clear that the wolf is the master herder, culling the herd of unfit individuals, and therefore should be rigidly protected.

It is interesting to compare the percentage of visibly impaired caribou in arctic Alaska and arctic Canada. During one three-day period in the summer of 1958 in the Northwest Territories my wife and I observed and segregated some 4,000 caribou. The percentage of visibly impaired individuals was notably less than Crisler's percentages for Alaska caribou. In other words, the more "protected" caribou are from natural culling, the greater is the incidence of visibly sick, limping or otherwise impaired animals. The moral is clear.

Besides being a notable contribution to the study of animal behaviour and a strong argument for a drastic overhaul in the concepts and practices of wildlife management in Alaska (and the recent extension of some of these practices to northern Canada), this book is a sheer joy to read. Mrs. Crisler possesses an unusual facility with words and some of her descriptions are rare gems: a wolf's "eel-supple spine," "the last frail wonderful webs of wilderness now vanishing from Earth," her comparison of the massed migration of caribou to spring break-up on the Yukon, a wolf's tail "rippling and spiraling."

Arctic Wild strikes at the heart of the central problem confronting both arctic Alaska and arctic Canada today—namely the need for a love of the country on the part of those white men who live there and especially those who govern and administer the land. Without this love for the land and its wild inhabitants any material cultural advance is but a resounding, empty shell.

I do not recommend this book to the professional wolf haters and wildlife poisoners. But it should be obvious by now that I wholeheartedly recommend it to all Alaskans and Canadians interested in their wilderness heritage and how to preserve it from destruction. I especially recommend it to students of wildlife management, for they are the ones who one day will assume responsibility for this, the most fragile of all ecological communities, for tundra, wolves, caribou, voles, and mountains. A book such as this, which could have been written only because wilderness exists, is of more value to the human race than are all the gold mines in the North. One can only fervently hope that the seething commercial interests which are thirsting to rip up this fragile ecological community for fleeting monetary gain will be confounded and overwhelmed by sane, rational men and that some of the arctic wild will remain to inspire future generations. *Arctic Wild* is fittingly dedicated: "To the wolves of the arctic tundra and to those people who will act to preserve life and habitat for them."

Dr. Pruitt is Research Associate in Mammalogy and teacher at the University of Alaska. During the past two years he travelled over northern Canada as a biologist on the Co-operative Caribou Investigation.

BRITISH COLUMBIA : A HISTORY
By Margaret A. Ormsby

Macmillans in Canada. 558 pages. $4.75

Reviewed by Walter N. Sage

THE appearance of this volume from the pen of Dr. Margaret A. Ormsby, a native daughter of British Columbia, marks an epoch in historical writing in the Pacific Province. The British Columbia Centennial Committee invited Dr. Ormsby to write the book, Macmillans in Canada undertook to publish it, and the typography, design and printing were achieved in Vancouver by the Evergreen

Press, under the direction of Robert R. Reid. Professor Ormsby herself saw the volume through the press. The result is a beautiful book, excellently printed and illustrated, in fact a pleasure to read.

British Columbia is separated from the rest of Canada by a mountain barrier and its history is a thing apart. Even after federation with Canada in 1871 British Columbians were not Canadians. They have since gradually become integrated, but they are still "Canadians with a difference." Dr. Ormsby has carefully traced the story of British Columbia from the arrival on the Pacific Coast of the Spaniards, Russians, British, and Americans, until today when the Pacific Province is still more Canada *on* the Pacific than Canada *of* the Pacific.

The amazing thing is that Dr. Ormsby has been able to cram so much into her book without losing the thread of her narrative or cluttering up her pages with unnecessary details. There are fine descriptive passages and the leading figures are skilfully portrayed. Cook, Vancouver, Mackenzie, Fraser, Thompson, Simpson, McLoughlin, Douglas, Moody, Begbie, Trutch, Walkem, McBride, Pattullo and others pass by in stately procession. They are not lay figures. The author makes them live.

From 1858 the political development of British Columbia is the thread on which Dr. Ormsby strings the economic and cultural. Certain chapters stand out, for example, "The People's Dick," the so-called "Reign of Sir Richard McBride." Thomas Dufferin Pattullo probably is the author's favourite.

As far as possible Dr. Ormsby has written from primary sources. She dug deep into Victoria, B.C., and Ottawa archives and has used two previously untouched collections of papers in the University of British Columbia Library.

The author has been criticized for omitting the native peoples of the Pacific Slope. This was deliberate; she was writing "white man's history."

British Columbia: A History is a much needed volume. Professor Ormsby is to be congratulated.

Dr. Sage, historian and author, is professor emeritus of history, University of British Columbia.

FIFTY MIGHTY MEN

by Grant MacEwan

Illustrated by Wm. W. Perebudoff. Modern Press, Saskatoon. 342 pages, $4.00.

Reviewed by Hart Bowsfield

Grant MacEwan in the past has given us a collection of stories of agricultural pioneers under the title *The Sod Busters*, and the admirable *Agriculture On Parade*, the story of the fairs and exhibitions of Western Canada. With *Fifty Mighty Men* we have a series of character sketches which began appearing in the *Western Producer* in 1957 and have now been published in book form.

The collection encompasses a wide variety of Western Canadian personalities—from Sitting Bull to R. B. Bennett, from Father Lacombe to W. R. Motherwell, from Guy Weadick to Henry Wise Wood. A connecting theme is not as obvious as in the other two books.

The reader should not expect depth of character analysis or interpretation of events, for nothing so academic has been intended or attempted. The purpose and attraction of the book lie in the presentation of a good story and a captivating personality. The author is undoubtedly more at ease and enjoying himself more with the rascals, the cowboys, and the ranchers—Editor Bob Edwards whose favourite bird was the bat; Slippery Dave Cochrane who had "lifting tendencies"; Kamoose Taylor, miner, missionary, whisky trader, hotel operator and rancher all in one lifetime; Guy Weadick, "Mr. Cowboy of Alberta"; Tom Lynch, king of the cattle trails; and John Ware, the Negro cowboy perhaps "the greatest of them all" who could jump into a corral of bulls and walk nimbly over their backs, and who "was afraid of nothing except a snake."

The less engaging personalities, the politicians and the farm crusaders, do not fare so well. R. B. Bennett, W. R. Motherwell, the "Great High Priest of Canadian Agriculture," A. J. McPhail, the "Wheat Pool Pilot," and George Spence, a "Crank About Confederation," for example, seem almost out of place and might well have been saved for a separate publication. Many others such as Riel, Dumont, Henday, etc., about whom little new is added in the way of personality or interest, and others who have been included in *The Sod Busters* might be judiciously omitted for if there is any criticism of this collection it is that too much has been included. One wonders also why no attempt at organization or classification was attempted.

Nevertheless we will be grateful and entertained in having in this permanent and accessible form the delightful accounts of Jerry Potts, the Mounted Police guide; Peter J. McGonigle, the editor and horse thief who was the creation of the fertile mind of Bob Edwards; Dr. Alfred Schmitz Shadd, and others, all of whose stories are delightful Canadiana deserving of a place in the story and legend of the West.

Mr. Bowsfield is Archivist for the Province of Manitoba.

THE GHOST OF NORTH AMERICA

By Bruce S. Wright

Vantage Press, New York, Washington, Hollywood. 140 pages. $3.50.

Reviewed by R. W. Sutton

BRUCE Wright, New Brunswick wildlife biologist, has long been intrigued by reports that seem to indicate the reappearance of an "extinct" carnivore in Eastern Canada. This "ghost" is the Eastern Puma (or panther, or cougar, or mountain lion), and at the outset the author states his preference for the name panther as used in the east since the first days of settlement. In the light of the growing number of cougar reports in eastern and central Canada, the publication of Mr. Wright's book is indeed timely.

Museums of natural history tend to be the recipients of an astonishing variety of sight reports concerning weird and wonderful creatures. These range from sea monsters to sky blue moose, and can usually be classified under such headings as "misidentification," "exaggeration," or even "inebriation." But there are some reports—and cougar sightings are amongst these—that require very careful sifting of evidence, especially now that Mr. Wright's findings have been published.

The opening chapters of this book deal briefly with the eastern puma prior to settlement, its retreat under pressure of organized panther hunts, and its presumed extinction. From this point we are led, by means of a series of fascinating eye-witness accounts, to realize that the animal must still exist. The chapters on field study methods are excellent. Illustrated with photographs and line drawings they provide a ready guide for anyone who suspects the presence of cougar in his area.

News reports utilize much lurid drivel to generate public hysteria whenever a cougar is sighted Perhaps it is too much to hope that Mr. Wright's book will allow us to see the puma in proper perspective as a magnificent part of our native fauna.

Mr. Sutton is Director of the Manitoba Museum.

PETER FREUCHEN'S BOOK OF THE SEVEN SEAS

by Peter Freuchen with David Loth

Julian Messner, N.Y. (Copp Clark, Toronto). 504 pages. $10.00.

Reviewed by A. Copland

THIS big book has a most attractive cover with Peter Freuchen, as rugged looking as the Ancient Mariner, bending over a globe of the world. Those

of us who knew Freuchen as a member of the Danish Fifth Thule Expedition to the Canadian Arctic in the early nineteen twenties will recall his colourful personality. We will remember also that day when the *Nascopie's* doctor, assisted by two fur traders amputated his big toe on the dining room table in the Company house at Chesterfield. By a chain of events that followed this surgery, Peter acquired a seaman-like "peg leg."

The book is probably a joint undertaking with David Loth as co-author but the writing has caught the dynamic personality of the man. Even his simple, direct manner of speaking is reflected in the telling of the story of the oceans and in those wonderful tales and anecdotes of the seas.

Whatever one wants to know about Kipling's *Seven Seas* can be found in this book, written in a way that will interest almost all ages of reader.

The mystical and misty processes of their creation is simply, briefly and even reverently told. In compelling language the authors tell of the early days of the sea when the great mountain ranges were thrust from its depths by the rippling and folding of the cooling crust of the earth. They speculate on the mysterious beginning and development of its now teeming life, from the microscopic single cell manifestation to the great marine mammals that man has not yet succeeded in completely destroying.

The things that influence the sea—the tides, currents, great waves and strong winds that ruffle its surface and even disturb its greatest depths are each the subject of well informed chapters.

Then man boldly ventures forth upon the sea in his rafts and frail shells of boats and in the course of time he transforms its vast, silent spaces into highways of discovery, culminating in the great Kon Tiki Expedition. How Freuchen would have revelled in the telling of the voyage of the submarine *Nautilus* under the Polar ice!

The exploits of famous sailing ships, the stories of the great sea encounters that changed the course of history, the ghostly and ghastly tales of long ago lose nothing in the telling.

There are vivid descriptions of barren, lonely islands which are still the haunts of strange animals that have changed little since the beginning of recorded time and the stories of unfortunate men who have been forced ashore on them only to die of thirst.

There is a chapter on the "rugged islands," like Greenland, that Peter Freuchen knew and loved probably more than anywhere else on earth. It was while on his way to re-visit Greenland that this Vagabond Viking died of a heart seizure in Alaska in 1958.

There is a provocative chapter on "Mining the Sea" which tells in that simple, direct manner just how much mineral wealth awaits the ingenuity of man to extract it. It all sounds so easy when the reader is informed that shellfish have no difficulty in doing it.

The chapter on the "Rights of Men and Property" is replete with tales of mutinies and shocking mass murders at sea. The chapter concerns itself with the legality of all these things and wonderful words creep into it such as "barratry" and "bottomry" which sound like perfectly heinous crimes but which simply mean in the legal language of shipping, deliberate destruction of a vessel and its cargo and the securing of a loan on the security of a vessel to allow it to continue a voyage.

This delightful book attracts attention if left lying around. It can be opened at any chapter for enjoyable reading. What a gift for a man who likes sea tales.

Sq.-Ldr. Copland is a civilian employee in the Department of National Defence.

NORTH OF SIXTY

By Colin Wyatt

Musson, Toronto, 223 pages $3.75

Reviewed by Frederica Knight

MR. Wyatt covered quite an extensive area in his journey to observe personally the result of the invasion of the ancient hunting grounds of the Eskimo by our civilization. He has conscientiously recorded his observations and conclusions. The latter of necessity have been biased to some extent by the pronouncements of white northerners with whom he has come in contact, but we are all biased in one way or another, and without personal opinions and interpretations it would be difficult to make such a book interesting, either for the uninformed city-dweller or the experienced northerner.

At this stage of development of our northern areas many people are taking advantage of the situation to arouse controversy and incidentally sell books. Mr. Wyatt adds a certain amount of grist to the mill of controversy. Like many others he disapproves of some of the governmental experiments to solve the 'Eskimo Problem'. This has become a popular parlour game, but Mr. Wyatt presents no new alternatives to the existing policy. His theory that the Eskimos of Frobisher Bay would resent the curtailment of their freedom and prefer to remain aloof to the amenities provided for their use would not seem to be borne out in fact, since to a great many Eskimos of the Eastern Arctic Frobisher Bay is considered somewhat of a Promised Land.

Mr. Wyatt's pictures of life at various arctic settlements are well drawn and accurate. We find many well-known veterans of the north described sympathetically, their fine character appreciated. He evidently enjoyed the informal mode of life as he experienced it. However his comment on page 218 regarding the "absence of crudity" in the home of Dr. Schaefer at Pangnirtung seems to imply that such crudity was a regular ingredient in the way of life of the non-European whites whom he encountered in his travels.

His descriptions of the Eskimos and their customs and philosophy seem quite competently done although doubtless the greater part of these must have been second-hand and some of the observations could not be applied to Eskimos universally.

North of Sixty provides quite a lot of general information on life in the Arctic as it is experienced both by Eskimo and white, and on these arctic-dwellers themselves, although little that is new. This information is well presented for the southern reader with little personal knowledge of the country and its problems, and furnishes a few talking points for those closer to the situation.

Mrs. Knight lives in the Eastern Arctic and has spent a large part of her life in various arctic settlements.

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ROCKS AND RAIN AND THE RAYS OF THE SUN

by William Fox

Oxford University Press,
90 pages. $3.25.

Reviewed by Gordon D. Taylor

MANY parents must often have wished for a book about conservation which would be readily understood by their children. If the conservation idea is to become a part of the everyday life of everyone, then education must start with young people. Mr. Fox has provided an excellent little book which places the basic ideas of resource management in a form that can be readily understood by elementary school children.

The book starts off with the story of soil formation and of the parts played in this process by rocks, rain and the sun. After the soil has been formed, the author discusses the various natural resources that depend upon soil—farm crops, forests, brush, grass and wildlife (in fact, life itself). The difference between wise management of the resource and careless or wasteful use is brought out for each.

The role of minerals in the natural resource picture is treated briefly, and then there is an excellent little chapter on the formation of oil. After a brief chapter on the ocean, there is a summary chapter on conservation.

In the final chapter Mr. Fox shows that while many children will never grow up to be directly concerned with the management of resources, good conservation in use of all resources is important to everyone. A final sentence in the book sums up the theme and the story that the author has tried to tell. In this sentence he expresses the hope of every conservationist for an informed public. His theme is "We can be conservationists at heart."

Gordon Taylor is a geographer with the Parks Branch of British Columbia.

THE COURTING OF ANN MARIA

by Lucille McDonald and Zola H. Ross

Thomas Nelson & Sons, New York,
192 pages. $2.95.

Reviewed by C. M. Atkinson

OF the making of books on the Oregon question there at times seems no apparent end in sight. The reader who picks up *The Courting of Ann Maria* may conclude that the choice of this highly controversial period in Northwest history has been a far too frequent one. If the new book is the result of research into hitherto untapped source material the reader familiar with this boundary dispute era may have an excuse for dipping his hands in the freshly printed pages. But if, as in the case of Ann Maria, little but the old, oft-rehashed material is offered as "local colour" for another love story nothing is to be gained from even a skimming experience.

The excuse that the book is for young readers, who presumably have not got far with their reading in this lusty period, is the only one that can be offered for such a book. But even then the discriminating reader could wish that the characters were a little less "stock" and the situations less hackneyed. The old pattern of Englishmen (typified by the servants of the Hudson's Bay Company) pitted against the stout-hearted Americans who have braved the terrors of the overland trail to reach their legitimate and long-promised paradise on the Pacific, is worn almost threadbare.

The story comes alive briefly in the chapters describing the illness, death and burial of Ann Maria's baby sister. Outside of that even the young and unsophisticated reader may find the heroine's indecision in the choosing of a husband pretty heavy going.

After reading a number of these "sugar-coated" history publications one is forced to the conclusion that, after all there is much to be said for the absorption of history "neat," preferably from unbiased sources if such are available on either side of the undefended border.

Corday Mackay Atkinson is a frequent contributor to western historical journals.

THE CROSSING OF ANTARCTICA

by Sir Vivian Fuchs and Sir Edmund Hillary

Cassell & Co., London, England.
338 pages. $6.50.

IN 1958 for the first time, a group of men crossed the surface of the Antarctic from one side to the other, by way of the South Pole.

This book tells the story of the expedition, not just the weeks taken in the actual crossing (to be precise, 98 days) but the years of preparation and planning, of raising funds and selecting personnel, of wintering parties and the establishment of bases. It is the human story of the great adventure of a number of courageous men; the scientific story will be told elsewhere, for most of them were trained scientists carrying out well planned research programs.

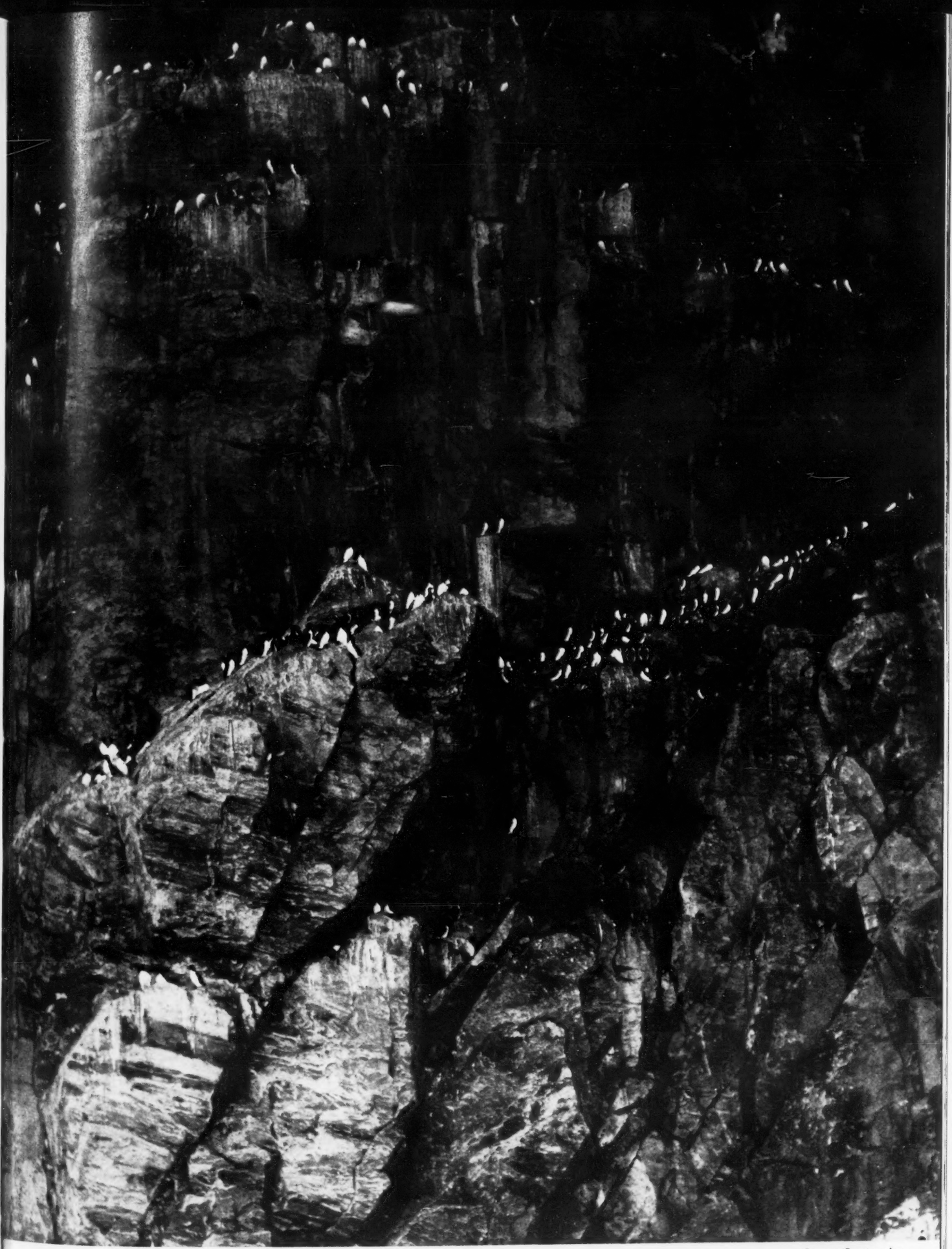
The human side is absorbing material. The tale is told quietly, without emphasis on events that might be played up as high drama—events such as the loss when the ice broke away with the greater part of the advance party's winter supplies at Shackleton base. Incidentally, aircraft and the vessel that took in the advance party through the Weddell Sea to Shackleton were the only Canadian participants in this Commonwealth expedition, and M.V. *Theron*, Newfoundland sealer and part-time government survey vessel, acquitted herself well. Taken calmly are the helplessness of the whiteouts, and the horrors of driving heavy vehicles across snow covered crevassed areas, where the driver may suddenly find himself dangling over an icy pit with nowhere to step out. As one remarked, it reminded him of driving a tank over a minefield except that in this case you waited for something to go down!

Most of the book is by Fuchs, with some chapters by Hillary, and material on dogteam trips from the participants. Both authors have the same modest, matter-of-fact way of writing: Fuchs who worked from Shackleton base on the Weddell Sea and made the transpolar crossing, and Hillary who established Scott base on Ross Sea and depots between there and the pole.

The men were busy all the time and, carefully selected, they were congenial. The only feeling of loneliness seems to have come at the beginning of the second winter at Shackleton when the ship left the transpolar party, not to return; their way out was more than two thousand miles across an inhospitable continent. Radio of course relieved isolation, and in time there was even telephone communication to England and New Zealand. Unlike the Scott party, the Shackleton party had no professional cook, but they did not mind experimenting, as witness a dish of krill served as a birthday treat, and the chef who was renowned for the tastiness of his green peas and finally revealed that it was achieved by the addition of a small amount of mint-flavoured toothpaste.

Tracked vehicles and planes were the mark of a modern expedition, but dogteams and foot travel played their part. The journey was not a straightforward matter of travel, proving tractors, men, and dogs, for there were innumerable stops for scientific work. Besides the land crossing, the first transantarctic flight in a small single-engine machine was made, when RAF men flew the Canadian built Otter from Shackleton to Scott.

The book is extremely well illustrated. It might seem that black and white pictures would best depict antarctic scenery, but the amazing colour photos show the fallacy. So fantastic are they that Fuchs puts in a note to say they are true to life. In addition to a lavish use of well reproduced colour prints there are numerous excellent monochrome plates.—*M.B.*



Lorene Squire photo

Thick-billed murres nesting in huge colonies on the cliffs at Cape Wolstenholme. These bird rocks were mentioned as far back as 1611 for Prickett, who was in the *Discovery*, wrote that the carpenter who was abandoned in the shallop with Henry Hudson asked if the ship reached the Capes (Wolstenholme and Digges) before them ". . . that I would leave some token that we had been there, neere to the place where the fowles bred." The capes take their names from Dudley Digges and John Wolstenholme who were promoters of Hudson's voyage.

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